2-2023

THE NEBRASKA TEACHER PIPELINE: TRENDS IN PERCEPTIONS OF PREPAREDNESS OF NOVICE TEACHERS

Cassandra A. DeStefano
University of Nebraska at Omaha, cassandradestefano@gmail.com

THE NEBRASKA TEACHER PIPELINE: TRENDS IN PERCEPTIONS OF PREPAREDNESS OF NOVICE TEACHERS

By

Cassandra A. DeStefano

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Under the Supervision of Elliott Ostler, Ed.D.

Omaha, Nebraska

February, 2023

Supervisory Committee:

Elliott Ostler, Ed.D. Chair

Tamara Williams, Ed.D.

Kay Keiser, Ed.D.

Sheryl McGlamery, Ed.D.

Abstract

THE NEBRASKA TEACHER PIPELINE: TRENDS IN PERCEPTIONS OF PREPAREDNESS OF NOVICE TEACHERS

Cassandra A. DeStefano, Ed.D.

University of Nebraska, 2023

Advisor: Elliott Ostler, Ed.D.

The increased attrition in the teacher workforce has policy makers at state and national levels attempting to fill vacancies from a candidate pool that is drying up. Particularly of interest is the percentage of beginning teachers who are leaving the profession early in their careers. Researchers have examined elements of preparation or induction programs in relation to teacher effectiveness to understand needs of preservice and novice teachers. Elements such as required coursework, clinical experiences, mentoring programs, and professional development have been studied. Some studies have examined preparedness in relation to student achievement or supervisor appraisals of novice teachers. Researchers have also analyzed data which reveals teacher perception of preparedness. The Nebraska Department of Education began issuing a survey to first year teachers and their supervising principals in 2017 to gather data around the perceived level of preparedness of new teachers. In this modified Exploratory Data Analysis (EDA) study, the survey results were analyzed to reveal trends in the perceptions of beginning teachers and of their supervising principals. Likert response portion of the survey was analyzed. Proportions of the data revealed noteworthy changes over time. Chi squared analytics were applied to uncover patterns of statistical significance which were housed in a probability matrix. The outcome of this modified EDA study explored additional implications for preparation and support of preservice and beginning teachers.

[copyright page]

This journey was only a success because of the gracious support of the Educational Leadership faculty at the University of Nebraska Omaha. Thank you to all who have given words of kindness and encouragement to combat self-doubt throughout my program. Most importantly, thank you to Dr. Elliott Ostler for his patience and humor while guiding me through this process. Your ongoing feedback and humility gave me confidence and made me believe my questions and concerns were always relevant.

Thank you to the Nebraska Educational Research Lab for the opportunity to be a part of such a prestigious and important body of work. Specifically, thank you to Dr. Tamara Williams for your mentorship and empowerment. Work for the NERL has been inspirational as I consider next steps in education.

Finally, thank you to my charming, goofy, devoted partner in life. You have been my rock, my caregiver, and my coach who reminded me to take breaks for self care or held me accountable when procrastination wanted to take hold. You have been behind the scenes as a cheerleader throughout all of my crazy ambitions, and I couldn't have done it without you.

Table of Contents

List of Figures

List of Tables

Chapter 1: The Problem

Introduction

Why is one of the most noble professions of all time facing an extreme crisis? The combination of a shrinking candidate pool of highly qualified teachers and a growing amount of teacher attrition has presented a major challenge for the future of public schools in the United States. “Teacher shortages and attrition are an ongoing problem, especially in the highest-needs, lowest-resourced schools” (Ashcraft, 2020, p. 13). National Education Association (NEA) author Tim Walker (2022) presented the fact that between February of 2020 and January of 2022, there were close to 400,000 fewer teachers. He continued to affirm what organizations like the Learning Policy Institute (2016) have predicted when it comes to the rapid decline in the teacher workforce. In an NEA survey of members in January 2022, an alarming 55 percent of respondents say they plan to retire or leave early (Walker, 2022, p. 18). Many researchers acknowledge a paradigm shift in average years of teaching experience within the teacher workforce to attrition rates.

Redding and Nguyen (2021) have pointed out one significant change in the teacher workforce in the past two decades is a result of the mass retirement of teachers in the baby-boom generation. The typical number of years of teaching experience in the late 1980s was 15 years (Ingersoll & Strong, 2011). By 2007, teachers serving in their first year were now the largest group of teachers. In other words, novice teachers began to outnumber seasoned teachers who could provide professional support (Redding & Nguyen, 2021). Consequently, lack of support caused a mild increase of early career attrition making the climate of the teacher workforce even more unstable (Ingersoll &

Strong, 2011). There has been a wealth of research devoted specifically to attrition of beginning teachers presumably for this reason.

For the purpose of this publication, teacher attrition occurs when a qualified educator leaves the classroom in pursuit of other opportunities outside of education. Analysis of data from nationally recognized surveys have yielded a variety of attrition rates for beginning teachers. For instance, in 2011, Ingersoll and Strong explained that between 40 percent and 50 percent of teachers leave the profession in the first five years. This was an increase from previous work done by Ingersoll (2003) in which the range was from 20 percent to 50 percent. Then, in their 2014 study, Ingersoll et al. cited a source from Perda (2013) who not only reinforced the increasing trend in beginning teacher attrition but also documented attrition of beginning teachers at a specific rate of 42 percent. As the timeline progressed, Gray and Taie (2015) pointed out that beginning teachers in the first five years of teaching leave the profession at a lower rate of 17 percent while the 2016 report from the Learning Policy Institute found that number to range between 19 and 30 percent (Sutcher et al., 2016).

Despite variations in attrition rates of new teachers, one thing is certain: a large number of beginning teachers are not staying in the profession. Researchers who have recognized that teacher retention is just as imperative as teacher recruitment have been examining potential reasons for the trend in beginning teacher attrition. For example, Ramos and Hughes (2020) suggest that, although financial factors have proven to be a factor in teacher attrition, there are other contributing causes that have limited research.

Beginning teachers experience a wide array of challenges, especially in their first year. In a 2007 study of 641 first-year teacher perceptions, Rochkind et al., found 41

percent of middle school and high school teachers experienced frustration with discipline while 33 percent of elementary teachers felt the same. This data reinforces findings from Ingersoll (2003) who connected teacher morale and classroom climate in his research surrounding personal motivators of teachers to remain in the profession. “While undesirable working conditions have gained standing as potential motivation for teacher departures, issues with student discipline and classroom management in particular have begun to stand out as significant sources of conflict and internal career dissonance for educators” (Ramos & Hughes, 2020, p. 5). This internal career dissonance is paired with limited amounts of self-efficacy.

Many researchers contend that a high level of self-efficacy in early teaching careers is a result of adequate preparation and support for new educators. It is widely recognized that these crucial ingredients are needed to ensure the success of a beginning teacher, but researchers, practitioners, and policy makers have differing ideas about what should be targeted to help bolster beginning teacher self-efficacy, and, ultimately, the retention of the next generation of teachers.

The following dissertation provides an overview of literature and an explorative research study which was conducted in partnership with the Nebraska Education Policy Research Lab. The tenet of the Teacher Pipeline Project encompassing the focus of preparedness of Nebraska’s novice teachers was the focus of the study. Results and implications for additional studies are also discussed.

Conceptual Framework

Amidst the government and nonpartisan organizations that had their hands in what has become known as educational reform in the 80s and 90s came a framework to

help measure teacher preparedness. The Chief Council of State School Officers (CCSSO) worked in conjunction with seven other organizations to form the Interstate New Teacher Assessment and Support Consortium (INTASC) in 1987. The standards, which were released in 1992, became a framework for measurement of how prepared beginning teachers were as they entered the profession. In 2011, the standards were adapted becoming "model core teaching standards that outline what [all] teachers should know and be able to do" instead of just those who are new (CCSSO, 2011, p. 3). The acronym changed was changed to reflect the modifications so that presently, the standards are referred to as InTASC.

These updated standards serve as a catalyst for synchronous practices across state lines. Hill et al. (2010) explain that the standards contain indicators of performance; however, the indicators should not be used as a prescriptive checklist. Rather, the indicators, when used as an observational tool, can provide meaning in context for each standard. The CCSSO has expressed the fact that the standards, when demonstrated, will vary in their level of sophistication depending upon a teacher's years of experience (Hill et al., 2010).

In all, the InTASC standards are comprised of ten fundamental tenets of teaching. The CCSSO has provided descriptors of not only the nature of each standard, but also a series of sub-standards which explain what performances, essential knowledge, and critical dispositions every teacher should be able to demonstrate (CCSSO, 2011). A secondary document was released in 2013 which provides descriptors for progression within each standard (CCSSO, 2013). The InTASC standards will serve as the conceptual framework for this study.

Definitions

Teacher Attrition: for this study, teacher attrition refers to teachers who leave a state's public school system in order to move into a nonteaching profession (Meyer et. al, 2019)

Beginning Teacher: for this study, a beginning teacher is a certified staff member employed in a Nebraska public school building who has five years of service or less.

Teacher Preparedness: a beginning teacher's competence to perform required duties as outlined in the InTASC professional standards of teaching

First-Year Teacher: an educator who has successfully completed preservice coursework and clinicals, has earned a certificate to teach by the Nebraska Department of Education, and is serving in their first year as a certified teacher in a classroom.

Third-Year Teacher: an educator who has successfully completed preservice coursework and clinicals, has earned a certificate to teach by the Nebraska Department of Education, and is serving in their third year as a certified teacher in a classroom.

Perception: a generally held view, judgement or appraisal about a particular matter one believes to be true; a subjective opinion of reality based upon experience

Operational Definitions

Preparedness for Classroom Teaching was measured with the use of Likert ranked based responses. Language measured perceived frequency or perceived proficiency.

Project Overview

The completion of this dissertation served as one portion of the Teacher Pipeline Project which was commissioned by the Nebraska Education Policy Research Lab in partnership with the Nebraska Department of Education (NDE). The research team, which is headed by Dr. Tamara Williams, is undergoing Exploratory Data Analysis processes to uncover myths and realities in the recruitment, mobility, and retention of teachers in Nebraska's public schools. Team members have been focusing on seven different elements which make up the teacher pipeline:

1. Early recruitment efforts of potential educators
2. Mobility and migration trends of Nebraska's teacher work force
3. Mobility and migration trends of Nebraska's teachers of color
4. Mobility and migration trends of Nebraska's STEM teachers
5. Mobility and migration trends of Nebraska's teachers in rural school districts
6. Perceived preparedness of beginning teachers and their supervisors
7. The impact of Nebraska's Excellence in Teaching Act (2010)

In the first phase of this project, researchers partnered with students of statistical analysis at the University of Nebraska, Omaha to explore trends in various data provided by the NDE. Researchers on the team developed a list of questions which could be answered or addressed through data analysis and interpretation. Conceptual themes were developed for continued inquiry and data collection in the next phase of the project. This dissertation focused on the sixth tenet of the teacher pipeline: Perceived preparedness of beginning teachers and their supervisors.

Reasons Why "Teacher Preparedness" is Significant

It is important to consider the phenomenon of perceived preparedness of beginning teachers and that of their supervisors in relation to the professional teaching standards set by the Interstate Teacher Assessment and Support Consortium (InTASC). By examining perceptions of preparedness as they relate to these professional teaching standards, policy makers and administrators can better understand the needs of novice Nebraska educators thereby developing retention strategies. Outcomes might also help to inform local teacher preparation programs as institutions navigate accreditation processes. Insights about how prepared beginning teachers believe themselves to be in their first years of teaching could inform future decision making to strengthen retention and to grow the teacher pipeline.

Using *modified* Exploratory Data Analysis methods, the purpose of this study was to explore the unidentified trends of perceived preparation for beginning Nebraska teachers in their first and third years in current and past educational environments. Within the study, Exploratory Data Analysis methods began with the research question:

> What are the trends of perceived preparation of beginning teachers by teachers and by teacher supervisors in Nebraska in relation to InTASC professional standards?
>
> The research question was decomposed into the following measurement elements:
>
> a. What are the trends in first year teacher data over time within the Likert responses to perceived frequency or proficiency of InTASC standards?
> b. What are the trends in third year teacher data over time within the Likert responses to perceived frequency or proficiency of InTASC standards?

c. What are the trends in data from supervisors of first year teachers over time within the Likert responses to perceived frequency or proficiency of InTASC standards?
d. What are the trends in data from supervisors of third year teachers over time within the Likert responses to perceived frequency or proficiency of InTASC standards?

To reveal intended results, the following tools of analysis were employed:

e. Exploratory Analytics: Proportions within and between identified sets of data within the probability matrix
f. Exploratory Analytics: Relationships within and between identified sets of data within the probability matrix
g. Frequency Analytics: Relationships between categorical variables within identified sets of data

The analysis for the study described herein followed a modified Exploratory Data Analysis (Tukey, 1977). Exploratory Data Analysis (EDA) is primarily a statistical approach to analyzing data which seeks to identify a subjective relationship between data sets and to identify the primary characteristics of that relationship. Depending upon the context, pre-determined questions that require definitive answers can defeat the notion of Exploratory Data Analysis because the intention is to uncover innovative ideas which need additional inquiry (Courtney, 2021; Tukey, 1993). With that in mind, the research question and the decomposition of the question into the measurable elements listed above is deliberately vague. The intention here was to give the researcher the necessary latitude to modify data sets which could be statistically analyzed; however, the data sets had

limited predictability. More precise analysis of various permutations of data are provided in chapter three.

Chapter 2: Literature Review

Historical Overview of Education Reform

The path toward measurement standards which determine preparedness of a beginning teacher is a relatively curvy one. In order to fully understand the role teacher preparedness takes in education, one must first have an understanding of the historical nature of educational reform and, ultimately, teacher evaluation in the U.S. For starters, the precedent set by the 1965 Elementary and Secondary Education Act (ESEA) created a channel for federal involvement in what had been state level discretion for roughly a century. Though intentions were pure, limited accountability was placed upon recipients of federal subsidies housed under Title I. Additional federal legislation such as the 1975 Individuals with Disabilities Education Act (IDEA) imposed requirements upon state and local education systems where none had been, but proponents of this partnership between federal and state entities pressed for a national department of education separate from the U.S. Department of Health. The Carter administration made this a reality.

Once Reagan took Carter's place in the Oval Office, there was an effort to eliminate the U.S. Department of Education, but it backfired. The secretary of education in 1980 was Terrel Bell who, under Reagan's administration, created the National Commission on Excellence in Education. Under his direction, *A Nation at Risk*, which argued that rather than society, schools should be held accountable for student performance, was developed and published (Mehta, 2015). Mehta (2015) asserted that this report was the turning point in current federal policy. The 1983 publication caused a nationwide frenzy that compelled over 250 task forces to be created within just one year.

The Council of Chief State School Officers (CCSSO), a nonpartisan organization

established to advocate for educational equity, partnered with Bell and backed the creation of the National Assessment of Education Progress (NAEP). NAEP was intended to serve as a means of comparing student achievement between states and yielded results that informed decision making in the next phase of educational reform.

InTASC Standards and Teacher Preparation

In 1987, CCSSO, in tandem with seven other national organizations, developed the Interstate New Teacher Assessment and Support Consortium (INTASC). In his 1996 article, former executive director of the Council of Chief State School Officers, Gordon Ambach, described the 1992 INTASC standards as a way to consistently measure what teachers should know and can do when they enter the profession regardless of the state. Ambach predicted that these standards could serve as a foundation for educational reform.

The need for standards was evident because adequately defining a "highly qualified" teacher seemed to vary from state to state as a result of variances in licensure standards in addition to varied policies for enforcement of license requirements embedded in each state's hiring practices (Darling-Hammond, 2000). The development of the standards, according to Ambach, "…aims not only to describe rigorous expectations for beginning teachers but also to lay out the elements of competent entry-level practice in a way that ensures consistency with emerging visions of accomplished teaching" (Ambach, 1996, p. 208). The standards were widely accepted as a means of continuity when considering whether teacher preparation programs were adequately preparing teachers to be highly effective. The name for the group responsible for these standards was later adapted to include all teachers rather than just new teachers which

also caused an adjustment to acronym capitalization: Interstate Teacher Assessment and Support Consortium (InTASC). For this reason, the current acronym will be used herein.

One of the partnerships in the InTASC group was the National Council for Accreditation of Teacher Education (NCATE). This group, founded in 1954, adapted their accreditation policies for teacher preparation programs to encompass the InTASC standards as a part of effective teacher preparation programs. Prior to InTASC standards, consensus on ways to measure teacher quality and preparedness varied. Initially, according to Linda Darling-Hammond (2000), indicators of teacher quality ranged from measures of IQ and verbal abilities to knowledge of subject matter with pedagogical skills, or a combination of these. These indicators all had merit when evaluating teacher effectiveness, but they were used inconsistently between states. InTASC standards remedied this challenge.

Now that reputable, nonpartisan groups had laid a foundation for educational continuity across states, it was time to reassess. In 1994, the National Commission on Teaching and America's Future (NCTAF) was formed and eventually published a report in 1996 entitled *What Matters Most: Teaching for America's Future* which seemed to be a response to the afore mentioned 1983 publication. The publication essentially provided a blueprint for the next major piece of federal legislation, but, moreover, placed high value upon the need for effective teachers. Federal law required that 100 percent of teachers in academic areas be "highly qualified" meaning they had at least a bachelor's degree, passed assessments to demonstrate subject knowledge, and held a license for teaching that subject (ASCD, 2015). The debate encompassing ways in which teachers should be evaluated for preparedness and effectiveness is still a conversation even twenty

years after the 2001 No Child Left Behind Act was passed. The Every Student Succeeds Act (ESSA) of 2014 softened some of the more rigid requirements for qualified teachers, yet input from different sides of the issue have leached into the accreditation process for teacher preparation programs.

Teacher Preparation Programs and Compliance

There are layers of complexities surrounding the concept of an adequately prepared preservice or beginning teacher which is why, according to Will (2019), roughly 43 percent of teacher preparation programs are accredited. Initially, accreditation was monopolized by NCATE, but educational reform made waves. By 1997, NCATE found it had competition. The Teacher Education Accreditation Council (TEAC) had been created to impose an alternative accreditation process for institutions with teacher preparation programs. Recently, these two organizations merged to form the Council for the Accreditation of Educator Preparation (CAEP) creating a unified framework that officially replaced its predecessors in 2016, but not for long. In 2017, the Association for Advancing Quality in Educator Preparation (AAQEP) emerged. Differences of opinion between the two organizations appear to be in the rigidity of accountability measures and practice that are seemingly rooted in the educational reform throughout the 80s and 90s.

In a 2019 interview, President Christopher Koch of the Council for the Accreditation of Educator Preparation (CAEP) expressed the need for rigorous standards and follow up measures for educator preparation programs despite declining enrollment and national teacher shortages; however, data acquisition abilities vary from state to state making it challenging for institutions to fulfill the reporting requirements. Conversely, proponents of the accreditation process by the Association for Advancing Quality in

Educator Preparation (AAQEP) describe CAEP's processes as compliance based rather than collaborative. Follow up reporting is also a part of the AAQEP's process, but it allows for flexibility regarding what data is leveraged (Will, 2019). Though there are conflicting values placed on accountability measures, it is clear that both CAEP and AAQEP believe there is a need for accreditation of traditional teacher preparation programs. The same cannot be said for all state-level departments of education.

Preparation Pathways: Traditional or Accelerated?

The current climate of the teacher workforce is reflective of predictions that Sutcher et al., (2016) made projecting that there would be a teacher shortage crisis. That prediction was prior to the COVID-19 pandemic. Teacher shortages are being felt across the nation which is adding strain to the heated debate circling teacher preparation requirements. In the 2021 National Council on Teacher Quality (NCTQ) report entitled *State of the States: Teacher Preparation Policy*, Putman and Walsh expressed "With teacher quality as the most important in-school factor contributing to a child's academic success, policymakers simply cannot afford to ignore the critical issue of teacher preparation" (Putman & Walsh, 2021, p. 1). The NCTQ has spent the past two decades advocating for state-level policies that connect traditional teacher preparation programs to measurement for effective teachers through rigorous admissions, holistic coursework, and strong field experiences. Conversely, in response to the teacher shortage crisis, emphasis from the U.S. Department of Education has been recently placed on alternative pathways to licensure.

In a March, 2022 press release, U.S. Secretary of Education Miguel Cardona, expressed the level of urgency for filling teacher vacancies and called for state action

surrounding the implementation of teacher residencies (USDoE, 2022). Cardona explained, “Registered Apprenticeship is an effective ‘earn and learn’ model with a long history of establishing career pathways in various industries by providing structured, paid on-the-job learning experiences combined with job-related technical instruction with a mentor that leads to a nationally recognized credential” (USDoE, 2022). This approach is quite radical given the linear progression of a traditional teacher preparation program, so what does the research say?

Research-Based Indicators for Adequate Teacher Preparation

Nonpartisan groups and government entities have made it abundantly clear that indicators of a successful public education system rest on the foundation of highly qualified teachers in America’s classrooms (Ingersoll et al., 2014). It is no question that highly effective beginning teachers demonstrate that they have been well prepared for their new career (Darling-Hammond, 2000). In contrast, “Teachers with little preparation tend to leave at rates two to three times as high as those who have had a comprehensive preparation before they enter” (Sutcher et al., 2016, p. 4). The correlation between preparation and retention is no different than trends in the early parts of educational reform. Teachers who left at higher-than-average rates three decades ago were those who obtained their license through a less rigorous or alternative preservice program and were noted as having been challenged in curriculum, instruction, and classroom management (Darling-Hammond, 2000). Ultimately, the question isn’t whether thorough preparation is needed, but it is more how to define outcomes-based principals of a program to ensure higher education institutions are producing highly effective, and therefore, highly prepared teachers.

The existing literature about how to adequately prepare beginning teachers is relatively narrow. Research studies target various milestones of the teacher preparation process rather than assessing entire programs. While some researchers have examined teacher preparation program coursework as a tool for adequate preparation, others have investigated the student teaching or clinical experience, yet there are also researchers who have placed emphasis on induction programs for beginning teachers. There have been attempts to assess the value of preparation programs by measuring teacher effectiveness once in the classroom. Studies in this lens have compared teacher qualifications and credentials such as certified areas or level of postsecondary education to indicators of student achievement like those found within measures of growth on standardized tests in core areas (Ingersoll et al., 2014). There are a limited number of studies that attempt to connect teacher preparation program composition with actual preparedness of a beginning teacher after they have entered into the classroom (Ronfeldt et al., 2020).

There are also differing research-driven opinions toward the necessary level of rigor a preparation program should contain. Ingersoll et al. (2014) distinguish two sides of the debate. One side argues the need for more rigorous and restrictive requirements because adherence to these requirements is what will yield highly effective teachers. On the other side, however, the authors say those against restrictive practices argue that they "are more akin to monopolistic practices that discourage large numbers of high-quality candidates from entering teaching" (Ingersoll et al., 2014, p. 2). Proponents of this view believe a more holistic approach to teacher preparation is necessary to meet the needs of aspiring preservice educators with low-income or diverse backgrounds (Wan et al., 2021) because economic exclusion and standardized testing act as structural barriers into

traditional teacher preparation programs (Bell & Busy, 2021). The lack of consensus when it comes to the content and composition of teacher preparation programs from admission to employment has created a need for empirical research that can assess the value of teacher preparation programs.

Traditional teacher preparation programs provide a linear approach in which the line between preservice teachers and novice in-service teachers is very clearly defined. Ingersoll and Strong (2011) define a preservice teacher as a candidate who receives education in content and pedagogy as well as experiential field opportunities before employment. The majority of teacher preparation programs contain concrete tenets which include content specific and pedagogical coursework, diverse, robust fieldwork, and specified degrees of support with accountability. Programs with a standards-based admissions process and a four to five year timeline are the widely accepted pathway to licensure across the U.S. One might contend that if this pathway is working, there is no need to question it; however, “half of education professors surveyed by the Fordham Institute report that these programs fail to prepare teachers for the demands of today’s classrooms” (Perry, 2011).

Though the model framework for teacher preparation programs is accepted from an arial view, Perry (2011) pointed out that inconsistencies in specific program requirements from one institution or state to another is an issue. She continues to explain that a system for teacher preparation programs that has out-comes based accountability measures is needed. In the quest for teacher preparation programs that produce high performing beginning teachers, researchers have not been able to conduct significant studies to help inform policy. This is because, for example, the number of required

pedagogical or content-based credit hours for state certification differ from state to state (Perry, 2011). The curriculum for said courses can also vary greatly.

Adequate preparation for preservice teachers is not only found in the coursework, but it is also in the clinical or student teaching experiences preservice teachers have. Like required curricula, the standards for internship or student teaching completion vary from state to state (Perry, 2011). In 2011, NCTQ conducted what some critics referred to as a flawed study in which 134 teacher preparation programs participated in a survey regarding the requirements of preservice field experiences. According to NCTQ's president, Kate Walsh, "Many student teachers complain about the poor quality of their experience, reporting that their mentor teacher used their presence as an excuse to take it easy, or only assigned them busy work, providing little guidance for learning how to teach" (Walsh, 2018, p. 39). Walsh argued the preparedness of a classroom teacher is only as effective as the quality of the student teaching experiences provided. Officials from 35 higher education institutions as well as Sharon P. Robinson, president of the American Association of Colleges for Teacher Education (AACTE), questioned the rubrics and methodology used in the study (Lewin, 2011). Despite the study's methodological integrity, the notion that quality field experiences positively impact preservice teacher preparedness was correct. Ronfeldt et al. (2020) drew on three different studies which confirm that beginning teachers are more effective when their field experience is under a more effective cooperating teacher as measured by an indicator for effectiveness (observational ratings of performance or value-added to student achievement models). Although there is limited empirical research to adequately assess the effectiveness of a teacher preparation program, there is a body of research to

implicate what preparation needs are in place for 21st century beginning teachers.

Teacher Preparation: Perceptions and Realities

Several researchers have conducted studies that contrast what some experts believe should be emphasized for preservice and beginning teachers. The focus of these studies was placed upon self-perceived preparedness of beginning teachers. In their 2020 regression analysis of 170 survey responses of beginning teachers, Chaney et al. concluded that the perception of novice teachers is they are not well prepared in the areas of classroom management, differentiation, and stakeholder involvement. Conversely, 60 percent of respondents believed to have a strong level of preparedness in their knowledge of content. These results indicate the need for additional pedagogical practice in teacher preparation which is what Ingersoll et al. (2014) discussed as a result of their study.

Another study was conducted by the REL Midwest in 2007. Data collection was in the form of a survey which contained various lines of questioning to address motivations for becoming a teacher, training experiences, and anticipated commitment to the profession in addition to several questions that specifically addressed a teacher's perception of preparedness once in the classroom. In one portion of the report, authors explained, "The new high school and middle school teachers are more likely to criticize their training for putting too much emphasis on theory compared with practical demands of the classroom" (Rochkind et al., 2007, p. 9). Again, there's implication that there are specific concepts within a teacher preparation program a preservice must be exposed to.

Perception-based data cannot necessarily measure the effectiveness of a program; however, this kind of information is useful when higher education institutions are making decisions that impact their teacher preparation programs. Perceived preparedness data of

beginning teachers can reveal hardships they face in what many researchers have said to be the most important part of professional development for their careers. Beginning teachers who feel ill-prepared, research has shown, will be less likely to stay in the profession when placed in culturally diverse settings.

In their non-parametric analysis of Likert survey items surrounding perceived preparedness, Lerner et al. (2021) found that priorities and perceived level of difficulty of certain competencies between schools which were low-income and those that were not differed. The team indicated that there is a need for differentiated preparation of preservice teachers to accommodate these differences. This reinforces results from a study by Rochkind et al. (2007) in which 63 percent of first year teachers express the need for strategies to adapt or change practices to accommodate the learners in a more diverse setting. Beginning teachers, especially those whose career begins in what has been called hard-to-staff buildings, are finding that they do not feel equipped in their role.

The Needs of Beginning Teachers

Adequate preparation of preservice teachers seems to be the key to a quality education system as noted earlier, but what about the more tacit components of working in such a human based profession? In an effort to better understand the rising attrition rates of beginning teachers, researchers have studied social-emotional implications for preparedness. For example, Hong (2012) has discussed the socialization process for beginning teachers as more significant than it is for veteran teachers. In a very small period of time, first year teachers are expected to be experts from day one, so “regardless of the quality or duration of the teacher preparation program, new teachers assume the full range of teacher responsibilities” (Boogren, 2015, p. 10; Moir et al., 2009). It can

become easy for beginning teachers to quickly become overwhelmed and experience a lowered sense of self-efficacy.

Sociology based studies have used empirical theoretical frameworks to identify the role that self-efficacy plays in beginning teacher preparedness. “Overall, teacher-perceived preparedness has been significantly associated with their sense of efficacy, sense of responsibility for student learning, and plans to remain in the teaching profession” (Deng et al., 2021, p. 490; Darling-Hammond et al., 2002).

For instance, Larson et al. (2018) discuss the cyclical nature of teacher self-efficacy explaining that higher self-efficacy in an area such as behavior management leads to improved teaching practices which positively impacts student outcomes contributing to an even higher sense of efficacy in the teacher. The result is a teacher who believes he or she is effective and therefore believes he or she has been adequately prepared for the role. “Teachers’ beliefs are considered an important base for their professional lives because beliefs mediate behavior and self-perception for the teacher which may in turn influence their teaching practice in the classroom and resilience in career decision-making” (Hong, 2012, p. 421). In other words, increased efficacy combined with the right programming for preservice and novice teachers can potentially impact the dilemma of beginning teacher attrition.

Recent studies have focused on the role that resilience plays in teacher education programs for this reason. Mansfield et al. (2016) found in a review of literature that there has been an examination of what they defined as resilience factors: personal resources, contextual resources, strategies (for coping and professional growth), and outcomes (overt and tacit motivators). The authors concluded that resilience should be explicitly

taught in preservice programs. Agency, or social competence, and the ability to take initiative to access various types of resources are necessary in the teaching profession. In fact Carstensen and Klusmann (2021) point out that job performance and satisfaction are contingent upon social competence.

Understanding First Year Teachers

Promoting efficacy and increasing social competence is not so simple. The complexities and demands of the teaching profession are not something even the highest performing preservice teacher can instantly master. Amidst early education reform, David C. Berliner (1988) identified competency domains from instructional pedagogy and later concluded that mastery of these domains takes a beginning teacher five years of practice (Boogren, 2015; Berliner, 1994). Additional research has been conducted to better understand what unique needs are more critical for beginning teachers especially to promote self-efficacy. Several conceptual frameworks emerged to define these trends. Ellen Moir (1999) developed one such framework that addresses the evolving emotions of a first-year teacher. The Phases of First Year Teachers defines what points in the school year a beginning teacher may experience compromised efficacy. In their research, Mansfield et al. (2016) used Moir's phrase of "disillusionment" to address the initial shock a beginning teacher may experience when idealist expectations of the profession are overshadowed by realistic challenges and demands.

Then Steffy and Wolfe (2001) crafted a teacher cycle framework with six progressive phases. In this framework, the phase of *apprentice* interestingly serves as an overarching bridge which connects the novice preservice teacher to the established professional. The authors explained the perception of new teachers is that they will

quickly become expert teachers until the reality of being in the classroom results in lowered efficacy (Steffy & Wolfe, 2001). Similarly, Marzano's (2011) stages of teacher development identifies the first stage as "initial status" (Boogren, 2015).

The commonality between these frameworks is the acknowledgment that beginning teachers, whether an apprentice, a first year, or initial status, have needs in order to feel adequately prepared. Boogren (2015) asserts that beginning teachers need support in the following domains:

1. Physical in which there is need for understanding nuances at the building level
2. Institutional in which there is a need for understanding nuances on a systemic level
3. Instructional in which there is a need for understanding how to effectively give instruction
4. Emotional in which there is a need for assurance.

The means by which beginning teachers can satisfy these needs is an added layer of complexity to the perception of preparedness. Pierce et al., (2020) imply one reason for attrition is because of lack of support for new staff. Since new teachers are already vulnerable, there is apprehension to approach new colleagues for fear of presenting themselves as incompetent (Kutsyuruba et al., 2018, p. 47). According to Hong (2012) the right kind of support and environment can help to nurture and develop a beginning teacher's efficacy and resilience. Professional competencies encompass more than content knowledge and instructional strategies, so Mansfield et. al (2016) imply continued professional development for resilience should be embedded into induction programs as well. Without adequate support for the whole teacher, the attrition problem

will continue to plague America's public schools – and wallets.

The Cost of Early Teacher Attrition

There are a variety of resources which have been impacted by beginning teacher attrition. In 2007, the National Commission on Teaching and America's Future stated the attrition problem was at an annual cost of $7 billion a year (Carroll, 2007). When all potential factors are included including inflation, experts have estimated that attrition is now costing the nation up to $8 billion annually (Ramos & Hughes, 2020; Sutcher et al., 2016). The cost of employee turnover is not only a financial one, but there is what Ingersoll et al. (2019) call loss of human capital which includes the invested time and money in development as well as resources to recruit and hire replacements.

Equally important is the impact attrition has on climate and student achievement. In their 2013 study, Ronfeldt et al. concluded that attrition has a significant negative impact on student achievement in math and English language arts, and their findings suggest that effects teacher turnover exceed the isolated notion of whether the replacement is effective. Additionally, in a 2019 comprehensive review of research, Podolsky et al., examined various studies which focused on the correlation between teacher years of experience and student academic growth as indicated by standardized test scores, and they conclusively stated that teacher effectiveness increases with years of teaching experience. Achievement scores are just one piece of the cost of attrition.

Building climate is another unstated cost to attrition. According to Ronfeldt et al. (2013), schools with consistently high turnover are not able to make progress on programs or curriculum because they are consistently starting over. The authors also explain student achievement and engagement are negatively impacted as a result of

teacher attrition because relationships, community, and the perception of cohesion are compromised (Ronfeldt et al., 2013). “When employees work together as closely as teachers do, high turnover rates begin to affect morale and the development of relationships between coworkers, and the sense of community that is important to the success of a school begins to diminish” (Stewart et al., 2021, p. 51). The loop of teacher attrition can erode the foundation of trust and collegiality that Hong (2012) argues is imperative for supporting a new teacher. Though student achievement and climate are impacted in any building, there is greater concern when it comes to the cost of attrition and educational equity.

High attrition rates of beginning teachers have created a cycle that has had a higher impact on specific student populations. Some researchers have implied the current attrition cycle is contributing to the achievement gap in education. Researchers like Miller et al. (2005) have indicated that part of the ongoing disparity in achievement is because new teachers who are employed by low-income, diverse schools are not prepared to work with culturally and linguistically diverse students (Lerner et al., 2021). “Hard-to-staff schools with high turnover rates typically end up with a disproportionate number of relatively inexperienced teachers, which can both create greater churn, if they leave rapidly as many beginning teachers do, and undermine student achievement as a function of both teacher inexperience and overall instability” (Sutcher et al., 2016, p. 41). Beginning teachers need between three and five years to become effective (Ramos & Hughes, 2020; Boogren, 2015; Berliner, 1994), and that is when the environment is predictable and supportive. In buildings where there are added challenges, the trend in attrition has proven to be greater. Geographically, there are specific areas across the

nation where attrition is of higher urgency.

Geography Based Shortages

The U.S. Department of Education and the current Secretary of Education, Miguel Cardona, have been working to solve the teacher shortage conundrum, but it is not a new issue. Sutcher et al. (2016) define "a teacher shortage as an inadequate quantity of qualified individuals willing to offer their services under prevailing wages and conditions" (p. 10). In order to determine the demand of full-time teachers, projected enrollment populations are examined with an ideal ratio of 16 or 17 students to one highly qualified teacher. As mentioned earlier, highly qualified under ESSA means teachers have met state requirements and are certified in the subject they teach (ASCD, 2015).

An uptick in enrollment, an increase in turnover, or the combination of the two contribute to predicted teacher shortages (Sutcher et al., 2016). In the 2015-2016 school year, it was predicted that the nation would experience a shortage of up to 80,000 teachers with a projected increase to 112,000 by 2018. Carver-Thomas (2022) said it was estimated that U.S. schools were short approximately 100,000 teachers which was still a significant increase in demand. The COVID-19 pandemic has exacerbated shortages (Carver-Thomas, 2022). In March of 2022, the National Center for Education Statistics reported 44 percent of the nation's public school buildings had at least one teaching vacancy. Shortages, however, are impacting certain geographic areas more than others.

In contrast to their suburban, generally more affluent counter parts, remote or rural schools as well as more densely populated urban schools have been experiencing shortages because, as Sutcher et al. (2016) explain, resources are less in these areas

resulting in lower wages and higher teacher-student ratios. Rural schools and high-need urban schools have higher populations of less experienced teachers as a result of continual turnover and limited human capital (Carver-Thomas, 2022; Sutcher et al., 2016; Caroll, 2007).

Shortages in Urban Settings

One geographic area which has been experiencing teacher shortages and attrition is in urban settings. An urban school can be defined as an inner-city public school which generally serves students with diverse needs and backgrounds. In many instances, urban is synonymous with low-achieving as defined by required state assessment and reporting systems. The No Child Left Behind Act (NCLB) of 2001 imposed accountability measures with the intention of tracking student growth in the areas of math and reading in exchange for more flexibility with how local districts could use federal funds. Though educational equity was the driving force, Safir and Dugan (2021) argue the accountability indicators of success had an opposite effect. Throughout the two decades following NCLB, schools across the nation were branded as low-achieving.

Urban, low-achieving schools where there are teacher shortages generally serve higher populations of students in poverty. Research has indicated a connection to teacher attrition and classroom management challenges in these settings. For instance, in a 2007 survey of 641 first year teachers, it was found that 42 percent of first year teachers believed students were hard to reach and challenging to teach in schools where more than 50 percent of the student population qualifying for free or reduced-price lunch (Rochkind et al., 2007). Low-income inner-city public school districts are more subject to attrition because of what Ramos and Hughes (2020) define as classroom discipline challenges.

Their recent case study with data from surveys and from structured interviews, found that the perception of a more challenging classroom climate in urban schools was a potential contributor to low morale and attrition.

It may be for this reason that many beginning teachers whose first teaching position is in an urban setting choose to relocate after a time. Two decades ago, Lankford et al. (2002) noted that teachers migrated away from low-achieving schools regularly. The cycle of attrition in high-minority high-poverty schools has persisted leaving vacancies to be filled by individuals who lack the appropriate credentials for the job. In fact, in 2016, it was estimated that students in these schools were three times more likely to be taught by someone who was not appropriately certified (Sutcher et al., 2016).

It has been discussed that attrition in urban settings is linked to teacher preparation. Learner et al. (2021) discussed an association between beginning teacher attrition and lack of preparation for teachers of culturally and linguistically diverse students. They postulated from their research that there are specific competencies for beginning teachers in low-income, urban settings. Teachers who are not prepared to meet the needs of students in urban settings are more likely to experience burnout and career dissonance (Ramos & Hughes, 2020). There is another geographic area experiencing shortages.

Shortages in Rural and Remote Settings

Like urban districts, rural school districts have what Sutcher et al. (2016) consider to be inadequate resources which could be contributing to teacher shortages. Two challenges seem to be the culprit for shortages in rural districts. For starters, rural communities are in direct competition with larger districts because they do not have

enough resources to pay teachers what larger districts can. Throughout the nation's school districts, roughly 18 percent are considered rural or remote according to *Education Week*'s analysis of recent federal data (Sawchuk, 2018). DeNisco (2019) summarizes shortages in rural districts as a result of funding limitations and high administration mobility.

Human capital is also scarce. Banghart (2021) explained that competition for new talent is difficult when institutions with teacher preparation programs are historically closer to urban and suburban school districts. The appeal of moving to a remote place that pays less is not great, and, Sawchuk (2018) pointed out that lose knit rural communities, can treat new teachers poorly making them feel like an outsider. Amidst the dichotomy of geographic shortages, there are also specific certification shortages.

Content Specific Shortages

In addition to the places where districts are lacking teachers, there are also shortages in specific content areas. For example, shortages in schools and teacher preparation programs alike imply that the shortage of math and science teachers will only become worse (Sutcher et al., 2016). Math and Science are not the only critical areas of need. Walker (2022) pointed out that bilingual educators as well as special education teachers are also in short supply.

In fact, special education teachers are experiencing the most severe level of shortages. The urgency behind filling these positions to stay in compliance with IDEA has caused vacancies to be filled with unqualified individuals, yet, Sutcher et al. (2016) point out that this subgroup of educators serve the most vulnerable students. Conversely, Viadero (2018) indicates that special education teachers are challenged in their role

because of competing priorities from different supervisors and lack of adequate collegiality from peers and principals. In areas with scarce resources, demands of a special education teacher are even more intense. Sawchuk (2018) explains that serving special education students in remote communities means an overwhelming caseload for the designated resource teachers.

Educational Policy for Teacher Preparation

Educational policy for teacher preparation has been an evolving entity. Reform in the 80s and 90s, including the advent of InTASC standards, sought to create a nation-wide system for developing, implementing, and assessing teacher preparation programs. Differing opinions in non-partisan organizations in conjunction with government bodies at the state and local level have long since debated over how restrictive or free the standards for effective preparation should be.

Officials and researchers have sought answers through empirical research identifying pivotal tenets of a preparation program as the more crucial piece. Still others have examined the perceived preparedness and needs of beginning teachers. Conclusions about the vulnerable nature of beginning teachers are irrefutable and backed by additional frameworks. Beginning teachers cannot be highly effective if they are not adequately prepared, and there is a costly consequence.

Attrition has proven to heavily impact both financial and human resources. School climate and student achievement are adversely impacted where attrition is cyclical. Lack of trust and cohesion has been linked to a “revolving door” of beginning teachers, especially in hard-to-staff schools.

Hard to staff schools in urban districts are experiencing teacher shortages in

addition to rural districts. Densely populated districts have underprepared teachers who struggle with classroom management and isolated work environments while remote districts lack the resources to compete for recruitment of high quality teachers.

With the undeniable evidence presented, it is clear that preparedness of beginning teachers has a direct impact on the attrition problem in America's schools. More research to understand preparedness of teachers is necessary. Ronfeldt et al. (2021) mentioned they found only three other studies that link teacher preparedness to teacher effectiveness as measured by observational ratings. This confirms what the researcher has found to be true: more research and literature is needed in the area of teacher preparedness.

Required Preparation of Nebraska Teachers

The InTASC standards from CCSSO (2011) outline four categories or domains for teacher practice which is broken into ten standards (see figure 1). The updated publication from 2013 contains indicators for each standard which address performances, essential knowledge, and critical dispositions as well as language to evaluate progression for each standard.

These standards became an overt part of state policy for Nebraska's education system in 2014 when Rule 20 was modified. Teacher preparation programs must meet all of the guidelines proclaimed in Rule 20: Regulations for the Approval of Teacher Education Programs. A recent version, implemented in July, 2014, lists all of the requirements of an institution to be able to offer a teacher preparation program with an initial or an advanced degree. Subsections of the rule outline faculty requirements, their necessary credentials, and a maximum workload.

InTASC Standards		
Category	**Standard**	**InTASC Standard Descriptor**
The learner and learning	Learner Development	The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.
	Learner Differences	The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.
	Learning Environments	The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self motivation
Content Knowledge	Content knowledge	The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.
	Application of content	The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.
Instructional Practice	Assessment	The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.
	Planning for instruction	The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.
	Instructional Strategies	The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.
Professional Responsibility	Professional Learning and Ethical Practice	The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.
	Leadership and Collaboration	The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

Figure 1: Adapted from The Council of Chief State School Officers (CCSSO), 2011

Rule 20 also provides in depth descriptions of program requirements for admission, progression, and program completion. For instance, teacher preparation candidates must complete an application process and provide proof of competency with test scores. As of January 2023, LB724: Eliminate certain basic skill and content test requirements for eligibility for teaching certificates, was under review with the Nebraska

Education Committee. If passed, the bill would waive basic skills testing as a requirement for certification. This bill is the byproduct of revisions from preceding legislation.

While enrolled, a student's GPA must be a 2.5 or better, and there must be ongoing assessments embedded in the coursework. At least one sixth of the coursework must be professional education coursework which can include practicum hours.

One additional requirement for teacher preparation programs in Nebraska under Rule 20 is field experience. The updated (2014) version classifies field experience of a preservice teacher into practicum and clinicals. Rule 20 states "field experiences are central to candidate preparation and shall provide opportunities to work with diverse students which may include, but is not limited to, differences based on ethnicity, race, socioeconomic status, gender, exceptionalities, and language" (NDE, 2014). Emphasis is placed on field experiences with time requirements as well as varied requirements for different areas of endorsement.

Following 100 hours of practicum experience is the clinical experience. Clinicals, formerly referred to as student teaching, must be at least one semester in an accredited Nebraska school. The institution must have a written agreement with the district and/or building who is hosting the preservice teacher, and there must be at least five observations conducted over the course of the clinical experience.

In addition to meeting the requirements under Rule 20, institutions with teacher preparation programs are responsible for helping a teacher candidate meet all of the stipulations listed in Rule 23: Regulations for the Basic Skills Competency Testing of Teachers and Administrators (2014) as well as Rule 24: Regulations for Certificate Endorsements (2020).

It is worth noting that in 2014, Rule 20 overwent a major overhaul in section five. Prior to 2014, the seven areas of educational competencies did not align with the InTASC professional teaching standards. The new indicators listed in 5.02 of Rule 20 have language which mirrors the InTASC standards (see figure 2). These indicators have two distinguishable differences, however. The Nebraska Department of Education requires teacher preparation programs to have at least one course in human relations as well as at least one course in special education (numbers 11 and 12).

NDE Title 92, Rule 20, Section 5.1, A-G (2007)	NDE Title 92, Rule 20, Section 5.02, A-L (2014)
1. Reading and Writing Teaching Competencies	1. Student Development
2. Humans Relations	2. Learning Differences
3. Special Education	3. Learning Environments
4. Learners with High Abilities	4. Content Knowledge
5. Technology	5. Application of Content
6. Student Assessment	6. Assessment
7. Nebraska Content Standards	7. Planning for instruction
	8. Instructional Strategies
	9. Professional Learning and Ethical Practice
	10. Leadership and Collaboration
	11. Human Relations
	12. Special Education

Figure 2: Comparison of teacher preparation competencies between 2007 and 2014

The Evolution of Appraisal of Nebraska Educators

In tandem with the modifications to NDE Rule 20, tools for teacher and principal appraisal were also developed in 2014. *The Nebraska Teacher & Principal Performance Framework* (2014) was developed by a 40-member committee beginning in 2011 using the InTASC standards as well as Charlotte Danielson's Framework for Teaching. The structure of this framework consisted of seven broad practice areas which were

accompanied by example indicators. An alternate set of standards for principals was also developed in the same document.

In 2020, the NDE revised the framework with approval from the Nebraska State Board of Education. The revised framework was retitled the *Nebraska Teacher and Principal Performance Standards* (2020). Two of the broad practices were eliminated, and the framework was expanded upon in other areas. As with the intention of the creation of the InTASC standards, the stakeholders of the NDE framework explain, "This common language will help guide local districts, educational service units, institutions of higher education, and state and local policymakers as they strive together to ensure Nebraska's continuing commitment to improving educational equity for all children" (*Nebraska Teacher and,* 2020, p. 1). The use of common language can help to facilitate qualitative and consistent teacher preparation which leads to a higher standard of instruction and student achievement.

It is in this same work that the Nebraska First Year Teacher Survey was developed and modified in order to provide teacher preparation institutions with a tool to use in compliance with Rule 20: 7.02, "The institution utilizes a graduate follow-up process to obtain program completer input regarding satisfaction, relevance and effectiveness of their preparation for professional roles and responsibilities" (Regulations for the…, 2014). The structure of the survey is based upon the InTASC standards and will be described in more detail in the following chapter.

Impact of COVID-19 on Teacher Preparation

Research and policy revisions helped to define the nature and needs of public education in the United States until the COVID-19 outbreak presented an unprecedented

need that drastically impacted the framework of what had been a traditional teacher education program. For starters, certification requirements were temporarily altered in the majority of states, and by the spring of 2020, 98% of teacher preparation programs indicated they were completely remote (Choate et al., 2021). Clinical opportunities were also encroached upon which is counterintuitive of the needs of preservice teachers according to a number of studies by researchers like Matthew Ronfeldt and Linda Darling-Hammond. Additional research is emerging which address the implications for the future of teacher education programs as a result of the crisis. Wilson and Kelley (2022) highlight a resulting uptick in resignations of current teachers who indicated that the stresses brought on by the effects of COVID-19 served as added pressure in an already challenging profession. Outcomes from the current exploratory study exposed implication for further inquiry through the lens of novice teacher needs, especially within a crisis.

Chapter 3: Method

The purpose of this study was to contribute to a body of literature that identifies trends in perceived preparedness of first and third year teachers. Perception data informs teacher attitudes and behaviors because, according to Bernhardt (n.d.), reported perceptions generally match values, beliefs, and behaviors. "Scholars have found survey-based measures of self-perceived preparedness to be positively related to teachers' career plans, self-efficacy, and retention…" (Ronfeldt et al., 2021, p. 57). Though perception-based inquiry can be interpretive and theoretical, the trends in perception driven survey responses can indicate where additional research is needed.

Exploratory Data Analysis (EDA) is a process of initial inquiry into data sets where the intention is to identify patterns and/or anomalies within various relationships. Courtney (2021) refers to EDA as a process of *discovery* as opposed to being theory driven. Those patterns or anomalies which are uncovered can lead to further inquiry and investigation as opposed to a conclusive outcome. An EDA researcher should have "a willingness to look for those things that we believe are not there, as well as those we believe to be there" (Tukey quoted in Courtney, 2021, p. 2). Because this was a modified EDA study, the focus fell primarily on statistical and frequency analytics. The attention on traditional sections of a Methods chapter were deemphasized.

Subjects

While the subjects of this study have been identified as first and third year teachers, along with supervisors of first and third year teachers, no subjects were surveyed. All subject affiliation fell within response parameters from previously completed surveys. No subjects were surveyed during this study as the survey instrument

had already been administered by the Nebraska Department of Education (NDE). The NDE compiled a list of teachers in their first and third years of teaching by using the Nebraska Student and Staff Record System in addition to the Nebraska Certification Database. As a result of the thorough nature of initial survey implementation, only completed survey data were used for the present study.

Instrumentation

The survey instrument used for this study was the Nebraska First Year Teacher Survey (NFYTS) which had been developed specifically in alignment with the InTASC Standards by the Nebraska Department of Education (see Appendix A and B). There were six consecutive years of first year teacher survey responses and six consecutive years of survey responses from supervisors of first year teachers. There were also four consecutive years of third year teacher survey responses as well as five consecutive years of survey responses from supervisors of third year teachers. The participants represented fourteen different teacher preparation institutions across the state of Nebraska. In the last two academic school years, roughly 60 percent of surveys sent electronically were returned. Survey responders also had access to the Nebraska Clinical Practice Rubric for additional descriptors of each InTASC substandard (see appendix C).

The survey design was intended to examine the perceived effectiveness and preparedness of first year teachers from the perspectives of first-year teachers and of supervisors of first-year teachers as well as of third year teachers and supervisors of third year teachers. The survey questions were adapted from The Interstate New Teacher Assessment and Support Consortium's (InTASC) professional teaching standards since the state of Nebraska recognizes these standards as indicators of teacher quality as stated

in Rule 20 (NDE, 2021). As stated in chapter one, the InTASC standards served as a conceptual framework to guide the Exploratory Data Analysis process.

Because there were data sets which range from the 2016/2017 school year to the 2021/2022 school year, a vast number of proportion analytics and comparisons were possible. To note is that, in the EDA process, it was discovered that changes had been made to the survey language and to the survey construct between the 2018/2019 school year and the 2019/2020 school year. Data was grouped and analyzed within the scope of either survey 1 or survey 2 responses for this reason (for a comparison of survey language, see Appendix D).

Within the survey were four areas for response outside of questions which addressed demographic information. The researcher labeled these areas as InTASC Standards, Perceived Impact, Overall Preparedness, and Open Responses. In the EDA process, the researcher only focused on two of the four areas for analytics in this study.

The first of these areas was a range of questions both surveys contained which were formatted with rank-based, Likert responses. The questions addressed perceived preparedness within each presented standard. Survey 1 contained thirty-one questions relating to InTASC standards. Twelve standards were presented each of which had between one and four sub-standards. The first ten standards presented were identical to the InTASC standards. The two standards addressed which were not a part of the original InTASC standards were “Impact on Student learning” and “Professional Dispositions.” The survey contained language to measure frequency. Participants could respond by selecting “consistent,” “frequent,” “occasional,” or “rare” to convey the perceived frequency in which a particular substandard had been met.

In contrast, survey 2 contained only twenty-five rank-based, Likert response questions over a total of 10 standards all of which were identical to the InTASC standards. The language of each question was modified or condensed down in comparison to survey 1 so that concepts which were originally found in the NDE twelfth standard of "professional dispositions" were infused into the InTASC standard 9: Professional Learning and Ethical Practice as well as standard 10: Leadership and Collaboration. Additionally, survey 2 used language to measure proficiency rather than frequency. Participants conveyed perceived proficiency within each standard by selecting "advanced," "proficient," "developing," or "below standard."

Another area of the survey the researcher analyzed was a short response question which was the same for survey 1 as well for as survey 2: "Comments to inform [institution name] with its continuing improvement efforts toward preparing classroom-ready teachers." The responses of this open response question were analyzed using a computer assisted qualitative data analysis software (CAQDAS) called MAXQDA. These analytics served as paradigmatic corroboration to the findings within the statistical analytics for relevant areas. Data from the open responses yielded what Saldaña (2021) calls correspondence patterns. In several instances, the frequency of specific syntax used in open response data affirmed the statistical significance in identified rank-based, Likert responses from both survey 1 and survey 2.

The two areas of the survey which did not receive attention included "perceived impact" and "overall preparedness." The former was an additional rank-based Likert question which measured the perceived impact of the teacher in question by selecting "highly effective," "moderately effective," "somewhat effective," or "ineffective."

Outcomes from this question did not provide the researcher with information for continued exploration and was therefore bypassed for analysis. The other area was a "yes" or "no" type response from a form of the question, "Would you consider this teacher effectively prepared for continuing employment in your district?" Nuanced linguistic differences in the question were presented to match the intended participant. Again, the ambiguous nature of the outcomes to this response provided rationale to disregard the data for the purpose of this study.

Procedures

Traditionally, Exploratory Data Analysis (EDA) procedures examine parametric data, and they centered around procedural steps:

1. Explore data sets deeply to define the Intent, Parameters, and outcomes from data sets
2. Define the underlying structure of the data sets
3. Extract important variables from the data sets
4. Detect outliers and anomalies
5. Test underlying assumptions

Although the steps here represent the formal EDA procedures for parametric data analysis, the use of a modified EDA followed the procedures to analyze non-parametric data.

Exploring the Data

To begin, the researcher gathered and defined all relevant data sets. The NDE initially obtained the data sets with the intention of informing Nebraska teacher preparation institutions of the perceived preparedness of participants who attended the institution. In

other words, the survey sought to learn whether beginning teachers perceived that they were prepared to begin teaching, and whether supervisors of beginning teachers perceived that their new staff members were adequately prepared. The parameters of survey respondents were clearly defined as first and third year teachers or supervisors of first and third year teachers within a given academic year. In all, there were twenty-one data sets which were analyzed.

Initially, the researcher worked to "clean" each data set. Reponses from the InTASC Standards, Perceived Impact, Overall Preparedness, and Open Response sections of the survey were housed in isolation of one another. The researcher could then more easily establish quantities of response types within each section independent of the others. Preliminary data exploration also entailed the removal of specific identifiers such as names of individuals, institutions, or areas of endorsement that were included in the open response data. It was through this early exploratory process that the second step in EDA naturally emerged.

Underlying Structure

Once each of the twenty-one sets of data had been pieced into the four previously mentioned sections, the next step in EDA was to determine an underlying structure for each data set. During exploration, the researcher had unwittingly identified what Courtney (2021) calls categorical variables. In the EDA process, categorical variables can help provide a substructure for organizing data points so that continued inquiry is guided in a logical and justifiable way. Hence, the defined categorical variables which would

provide the substructure for each data set became the following:

	Defined Categorical Variables in Initial Exploration of Data
1	Rank-based Likert Responses to measure perceived preparedness of each InTASC substandard
2	Rank-based Likert Responses to measure level of perceived overall impact
3	"Yes" or "No" type responses to measure perception of overall preparedness
4	Open ended responses of participants regarding suggestions for teacher preparation programs

Figure 3: Defined Categorical variables

Prior to the study, the researcher had predicted that the domains (or categories) within the InTASC standards could serve as a substructure for categorizing each data point. This, however, did not prove to be the case because, as is the nature of EDA, the researcher uncovered something unexpected.

While isolating the data in each of the twenty-one sets into the newly defined categorical variables (defined areas within the survey), the researcher discovered a difference in the language used for both the rank-based, Likert measurement as well as for the addressed standards (see appendix D). The language in both the Likert ranked responses as well as in each standard was changed between the surveys administered in the 2018/2019 year and the surveys administered in the 2019/2020. It had become clear through further examination of these differences that comparison of data in its current form would not logically be possible. The initial research question intended to make comparisons of responses over time in order to uncover possible trends. The language differences between surveys changed the *kind* of ranked measurement a participant was being asked to provide. While participants from the earlier group of the data sets (years 2018/2019 and prior) had measured standards in terms of frequency, the later group of

participants (years 2019/2020 and after) had measured standards in terms of competency. It would not make sense to compare frequency and competency to one another and expect to interpret valid trends. This unpredicted discovery led to a separately defined underlying structure in addition to the categorical variables.

In order to isolate data sets so that they aligned with the same set of variables within their like surveys, the data sets were reallocated into eight different subgroups. For purpose of this study, a subgroup was defined as a set of data for either survey 1 or 2 that had an additional identifier for the type of participant response. A sample, then, was defined by the subgroup and the year the responses were given (see figure 4).

	Subgroup	Sample
Survey 1	Responses of First Year Teachers to Survey 1	Responses from 2016/2017
		Responses from 2017/2018
		Responses from 2018/2019
	Responses of Supervisors of First Year Teachers to Survey 1	Responses from 2016/2017
		Responses from 2017/2018
		Responses from 2018/2019
	Responses of Third Year Teachers to Survey 1 (as the only sample within the subgroup, this data was not compared to any other in preliminary analysis)	Responses from 2018/2019
	Responses of Supervisors of Third Year Teachers to Survey 1	Responses from 2017/2018
		Responses from 2018/2019
Survey 2	Responses of First Year Teachers to Survey 2	Responses from 2019/2020
		Responses from 2020/2021
		Responses from 2021/2022
	Responses of Supervisors of First Year Teachers to Survey 2	Responses from 2019/2020
		Responses from 2020/2021
		Responses from 2021/2022
	Responses of Third Year Teachers to Survey 2	Responses from 2019/2020
		Responses from 2020/2021
		Responses from 2021/2022
	Responses of Supervisors of Third Year Teachers to Survey 2	Responses from 2019/2020
		Responses from 2020/2021
		Responses from 2021/2022

(figure 4) Underlying Structure of Data

Extracting Variables

Now that the data sets had been explicitly defined through methods of categorization, the researcher could quantify responses for further analysis. Data from two of the defined categorical variables were further examined. These were the Likert responses to the standards for both survey 1 and for survey 2 (categorical variable 1) as well as the open responses for both surveys (categorical variable 2).

To begin the process of analyzing the first categorical variable, the researcher used Microsoft Excel functions to develop proportions tables for survey responses which were subsequently converted to response percentages (see figure 5). It was during this process that the researcher discovered another slight variation in surveys between data sets. The survey administered to first year teachers and to supervisors of first year teachers in the 2019/2020 school year addressed only 15 sub standards which is ten less than the surveys administered in the 2020/2021 and 2021/2022 school years.

NFYTS- Principal Reponses- 2021/2022					
	Total responses:	Advanced	Proficient	Developing	Below St.
1.1	401	63	246	86	6
1.2	401	77	232	87	5
2.1	401	79	223	96	3
2.2	401	82	196	116	7
2.3	401	78	226	92	5
3.1	401	149	199	48	5
3.2	401	116	189	88	8
4.1	401	94	264	40	3
4.2	401	93	265	41	2
4.3	401	93	256	51	1
5.1	401	59	232	106	4
5.2	401	69	250	80	2
6.1	401	83	258	59	1
6.2	401	72	253	75	1
6.3	401	73	225	97	6
6.4	401	68	223	105	5
7.1	401	82	255	62	2
7.2	401	75	244	81	1
8.1	401	86	260	52	3
8.2	401	63	236	99	3
8.3	401	97	208	89	7
9.1	401	127	234	36	4
9.2	401	94	252	51	4
10.1	401	108	251	38	4
10.2	401	97	245	53	6

NFYTS- Principal Reponses- 2021/2022					
	Total responses:	Advanced	Proficient	Developing	Below St.
1.1	401	0.157107232	0.613466334	0.21446384	0.014962594
1.2	401	0.19201995	0.578553616	0.216957606	0.012468828
2.1	401	0.197007481	0.556109726	0.239401496	0.007481297
2.2	401	0.204488778	0.488778055	0.289276808	0.017456359
2.3	401	0.194513716	0.563591022	0.229426434	0.012468828
3.1	401	0.371571072	0.496259352	0.119700748	0.012468828
3.2	401	0.289276808	0.471321696	0.219451372	0.019950125
4.1	401	0.234413965	0.658354115	0.099750623	0.007481297
4.2	401	0.2319202	0.66084788	0.102244389	0.004987531
4.3	401	0.2319202	0.63840399	0.127182045	0.002493766
5.1	401	0.14713217	0.578553616	0.264339152	0.009975062
5.2	401	0.172069825	0.623441397	0.199501247	0.004987531
6.1	401	0.206982544	0.643391521	0.14713217	0.002493766
6.2	401	0.179551122	0.630922693	0.187032419	0.002493766
6.3	401	0.182044888	0.561097257	0.241895262	0.014962594
6.4	401	0.16957606	0.556109726	0.261845387	0.012468828
7.1	401	0.204488778	0.635910224	0.154613466	0.004987531
7.2	401	0.187032419	0.608478803	0.201995012	0.002493766
8.1	401	0.21446384	0.648379052	0.12967581	0.007481297
8.2	401	0.157107232	0.588528678	0.246882793	0.007481297
8.3	401	0.241895262	0.518703242	0.221945137	0.017456359
9.1	401	0.316708229	0.583541147	0.089775561	0.009975062
9.2	401	0.234413965	0.628428928	0.127182045	0.009975062
10.1	401	0.269326683	0.625935162	0.094763092	0.009975062
10.2	401	0.241895262	0.610972569	0.132169576	0.014962594

Figure 5: Example of Proportions Tables for Responses to InTASC Standards

For the second categorical variable, the researcher cleaned and coded the open responses to the question: “Comments to inform [teacher preparation institution] with its continuing improvement efforts toward preparing classroom-ready teachers.” Despite the differences in language and composition between survey 1 and survey 2 for the first categorical variable, the open response question remained the same across all twenty-one data sets. This provided the researcher with a total of 4,140 responses.

To honor anonymity of individuals or institutions, and to maintain objectivity, identifiers such as college/university name or teacher names were first eliminated from responses. An observation to note is the fact that over the data sets for responses from supervisors of both first and third year teachers, many respondents worded their answers as if they were formally reviewing the teacher candidate in question rather than giving broad suggestions to the teacher preparation program or institution. As a result of this, the researcher had line items that had to be eliminated because they didn’t yield any directly suggestive language that aligned with the InTASC standards.

When considering the syntax of the open question, “continuing improvement efforts” implies that this question is asking for feedback on what is needed in education preparation programs to improve the level of preparedness for a preservice teacher. Therefore, any comments that did not indicate suggestions for improvement were moved into a separate tab labeled “arbitrary comments.” Additionally, replies which included suggestions for specific content areas, departments, grade levels or programs were also moved to this tab as these concepts are too narrow a focus to align with the InTASC standards that were the framework for this study.

Key words and phrases that consistently emerged which aligned with the

standards for both surveys during initial cleaning became codes for analysis using MAXQDA. For example, the phrase “classroom management” was a frequently observed phrase which aligns with sub standard 3.3 in survey 1: “Learning Environments-manage student behavior to promote a positive learning environment” as well as with sub standard 3.2 in survey 2: “Learning Environments- Use and communicate clear task and behavioral expectations to support an environment of learning.” In this example, the InTASC standard of Learning Environments subsequently housed a list of frequently mentioned words and phrases which related to the practices within that standard. In other words, “classroom management” was included in a list which also contained Routines/procedures, Classroom expectations, Behavior management, Behavior supports, and Student behaviors to name a few.

When considering a syntactical coding method, each InTASC standard represented a category, and the identified phrases served as codes within said category. The intention was to identify the frequency of the use of given codes which could later potentially validate statistical anomalies that were uncovered in the first categorical variable. This coding method is what Johnny Saldaña (2021) refers to as Paradigmatic Corroboration in a mixed method analysis. Before running the cleaned open response data through MAXQDA, the researcher shifted attention back to the first categorical variable to move on to the next step in the EDA process.

Detecting Outliers

The twenty-one data sets for categorical variable 1: Likert Responses to perceived frequency in survey 1 or to perceived proficiency in survey 2 needed to undergo further examination to detect probable outliers before additional action could be taken in

analyzing the second categorical variable: the open question responses.

The researcher compared sample data from like subgroups between years to uncover response frequency changes of greater than or equal to five percent in the highest ranked response to each sub standard. When referring to a sub standard, it is a survey question with language developed by the NDE which serves as an indicator for one of the InTASC standards. The NDE sub standards language is similar to indicators listed in the CCSSO (2011) publication, however, there are minor differences in several areas. For this reason, a sub standard should be considered synonymous with NDE specific language while a standard should be considered synonymous with InTASC specific language.

In survey 1, there were a total of five permutations, and in survey 2, there were a total of six. To clarify, a permutation in this circumstance refers to the number of ways sub samples were compared between years. The first comparisons between like subgroups in survey 1 revealed five percent variances in as many as 18 sub standards while initial comparisons between like subgroups in survey 2 revealed five percent variances in as many as 13 sub standards. While some sub standards presented differences in one or two places, others appeared across subgroups. In following the nature of EDA inquiry, the researcher decided to conduct additional analysis on sub standards which justifiably warranted further examination. An additional criterion was developed.

To narrow the depth and breadth of outcomes for continued analysis, the researcher calculated the proportions of the identified sub standards for each sample comparison by dividing the number of times the sub standard revealed a five percent

variance in frequency of highest ranked response by the total number of times the sub standard was presented to participants across subgroups. As an example, a total of six combinations for survey 1 were compared, but, for instance, comparisons of sub standard 3.1 revealed a variance of five percent in only three subgroups. Therefore the frequency of the five percent variance was observed 50% of the time.

From this, the researcher was able to derive a list of sub standards in which at least a five percent variance occurred more frequently across all subgroups. To clarify, two criteria were now established to determine the priority for further analysis. Sub standards which had at least a five percent increase or decrease in the frequency of highest ranking responses from one academic year to the next and which appeared in at least 50% of the sample comparisons became the priority for further analysis (see figures 6 and 7). If, for instance, a five percent variance for a particular standard only occurred between the 2016/2017 and the 2017/2018 first year teacher data sets but nowhere else, then the need for further analysis was no longer a priority of the researcher at that time.

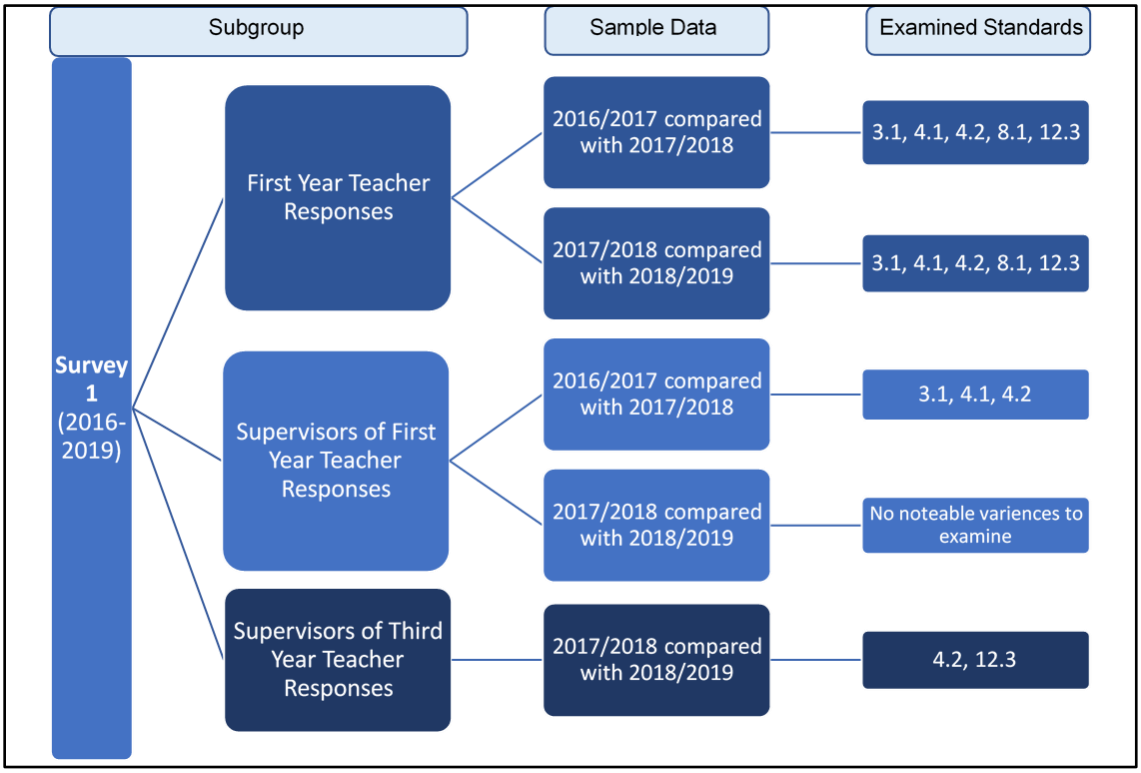

Figure 6: Break down of statistical comparisons for survey 1

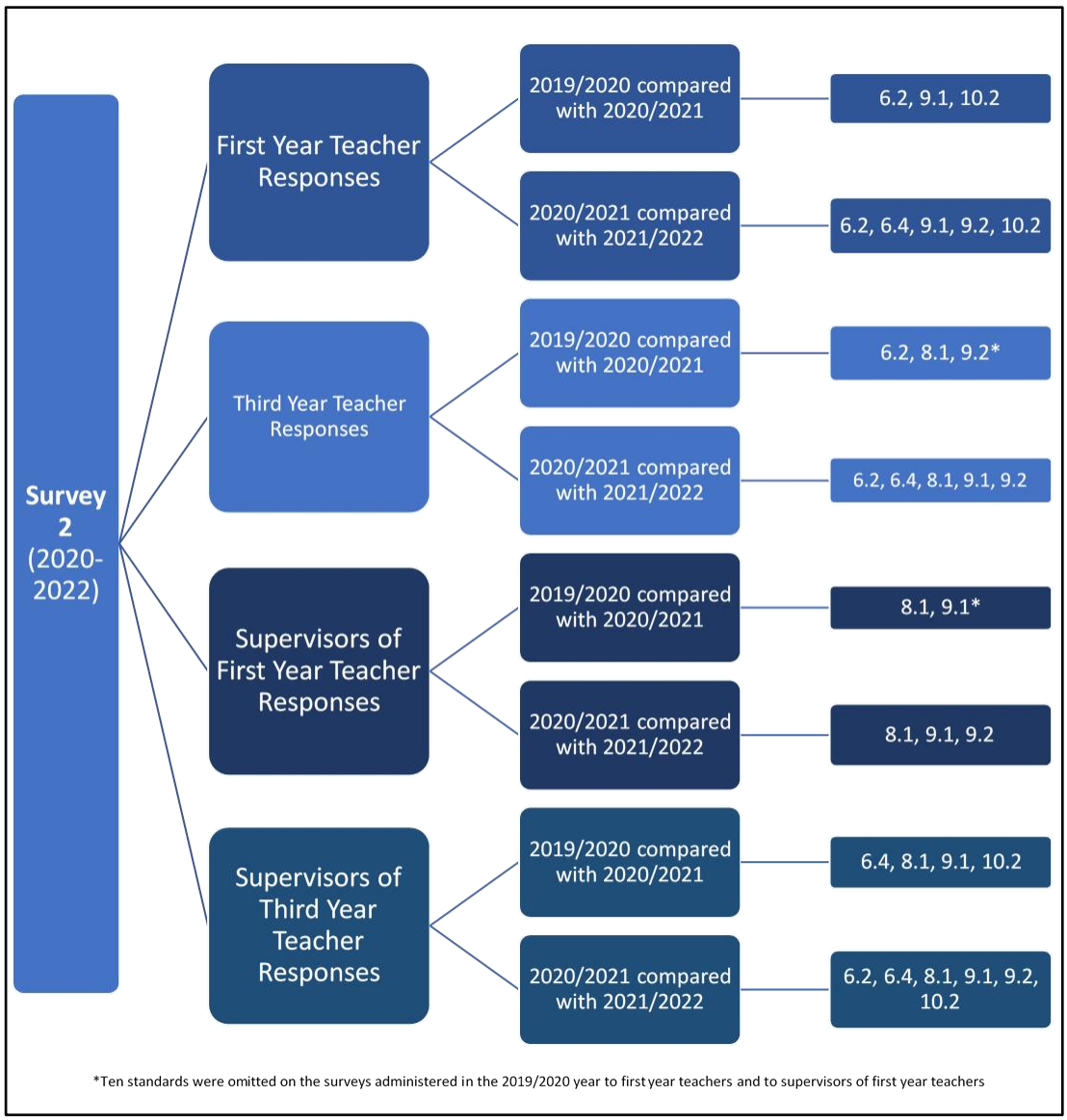

Figure 7: Break down of statistical comparisons for survey 2

Testing Assumptions

Now that outliers had been targeted and prioritized, the researcher conducted statistical analysis to test the null hypothesis: There is a significant difference in response to sub standard (*S*) between academic year 1 (*Y1*) and academic year 2 (*Y2*). The standards which did meet the two preliminary criteria were analyzed using Pearson's Chi-Squared test of independence. The researcher created contingency tables, expected values

tables, and Chi-squared values tables for each identified sub standard (see figure 8). Survey 1 had five sub standards identified, and survey 2 had six. These contingency tables were used to conduct a Chi-squared test of independence to determine which sub standards between two different years were significantly different based on a p value of $\leq .05$ thus leading the researcher to reject the null hypothesis for the compared variables.

Once all of the identified permutations had been tested, the researcher was able to use the outcomes to inform continued analysis of categorical variable 2. Frequency analytics were applied to the open response data, but, like data within categorical variable 1, limiters on which data sets were analyzed were defined. The sub standards within a data sample in given year which emerged as being significantly different (p value of $\leq .05$) served as the first of two criteria. In other words, if sub standards did not emerge as statistically significant within a certain subsample, no additional analysis was conducted on the open response data found within that same data set.

Survey 1: First Year Teachers Observed Values for Standard 12.3					
Year Administered	Consistent	Frequent	Occasional	Rare	totals
2017/2018	322	63	4	1	390
2018/2019	447	141	20	2	610
	769	204	24	3	1000
Survey 1: First Year Teachers Expected Values for Standard 12.3					
Year Administered	Consistent	Frequent	Occasional	Rare	totals
2017/2018	299.91	79.56	9.36	1.17	390
2018/2019	469.09	124.44	14.64	1.83	610
	769	204	24	3	1000
Survey 1: First Year Teachers Chi^2 Values for Standard 12.3					
Year Administered	Consistent	Frequent	Occasional	Rare	totals
2017/2018	1.627048448	3.446877828	3.069401709	0.0247009	8.168029
2018/2019	1.04024409	2.203741562	1.962404372	0.0157923	5.222182
					13.39021

Figure 8: Example of Contingency Tables

The open response question participants answered, "Comments to inform [institution name] with its continuing improvement efforts toward preparing classroom-ready teachers" led responders to provide suggestions for improvement within any Nebraska teacher preparation program. The interpretive nature of the question implies that responders are pointing out areas of improvement. It was this conclusion that helped to define the second criteria to determine which data sets would undergo frequency analytics. If differences in responses revealed statistical significance because there was a decrease in the frequency of highest ranked responses, then the researcher determined paradigmatic corroboration was needed. The justification for this is because a decrease in perceived confidence in preparedness in areas of significance indicated that there was a declining trend which could be interpreted that it was an area of perceived need.

Analysis of categorical variable 1 and categorical variable 2 was conducted with exploratory and frequency analytics. Decisions by the researcher with regard to what data was to be analyzed were not random, but rather logically sequential. Each outcome from each step in the intentionally vague process informed the researcher's next actions. The following results discussed below outline the outcomes from this study. The myriad of implications for possible future studies around this data are addressed in chapter five.

Chapter 4: Results

The goal of this modified Exploratory Data Analysis (EDA) study was to reveal the interdependence of data and how it could be used to model relationships beyond the traditional constraints of hypothesis testing and to create new questions for hypothetical analysis. The conceptual framework for the study was the Interstate Teacher Assessment and Support Consortium (InTASC) standards. The Nebraska Department of Education (NDE) developed a survey with descriptors for each of the ten standards. These descriptors or sub standards served as survey items and were a major part of the study. The researcher began with a central question:

> What are the trends of perceived preparation of beginning teachers by teachers and by teacher supervisors in Nebraska in relation to InTASC professional standards?

The question was broken down into more specific areas of measurement:

a. What are the trends in first year teacher data over time within the Likert responses to perceived frequency or proficiency of InTASC standards?
b. What are the trends in third year teacher data over time within the Likert responses to perceived frequency or proficiency of InTASC standards?
c. What are the trends in data from supervisors of first year teachers over time within the Likert responses to perceived frequency or proficiency of InTASC standards?
d. What are the trends in data from supervisors of third year teachers over time within the Likert responses to perceived frequency or proficiency of InTASC standards?

To reveal intended results, the following tools of analysis were employed:

e. Exploratory Analytics: Proportions within and between identified sets of data within the probability matrix
f. Exploratory Analytics: Relationships within and between identified sets of data within the probability matrix
g. Frequency Analytics: Relationships based on frequency within identified sets of data

The tools of analysis were applied through a modified version of Tukey's (1993) Exploratory Data Analysis in which the researcher conducted the following steps:

1. Explored data sets deeply to define the Intent, Parameters, and outcomes from data sets
2. Defined the underlying structure of the data sets
3. Extracted important variables from the data sets
4. Detected outliers and anomalies
5. Tested underlying assumptions

It was through this process that the researcher narrowed the focus of 21 sets of data into two categorical variables which were examined more closely. The first categorical variable consisted of the rank based, Likert responses to the listed sub standards from NDE. This was subsequently broken into two factions because of the change in survey language. The second categorical variable analyzed was the open response answers which were coded for Paradigmatic Corroboration (Saldana, 2021). To reiterate, the open response question presented to every subgroup contained the following

language: “Comments to inform [Teacher Preparation Institution] with its continuing improvement efforts toward preparing classroom-ready teachers.”

The following discussion of analytic outcomes refers to terms which should be redefined for clarity. When there is reference to “standard,” this is one of the ten overarching InTASC standards. When there is reference to a “sub standard,” this is one of the specific descriptors formulated by the Nebraska Department of Education (NDE) as it relates to an InTASC standard. When a “category” is referred to, this is one of four broad tenants of the teaching profession as defined by the Council of Chief State School Officers (CCSSO), an organization that is credited for authoring the InTASC standards.

Data is also discussed with specific terminology. Survey 1 and Survey 2 address two distinct groups of data from surveys which contain the same InTASC framework but are linguistically and structurally different from one another. A sub group is a group of data within survey 1 or survey 2 with an additional identifier such as “first year teacher.” A sub sample is a specific data set within one of the subgroups that also contains the identifier of which academic school year the responses were given. The EDA study also resulted in a defined structure to inform data analysis.

Categorical variable 1: Likert Responses in survey 1

Sub standards had been identified for analysis first by comparing like subgroups and each standard from year to year to identify changes of $\geq$ or $\leq$ five percent. Those standards which met this criterion in at least half of the instances in which it was presented warranted deeper analysis. Pearson’s Chi-squared test of independence was conducted for these identified standards within each subgroup, and outcomes were put into probability matrices (see tables 1-3).

Table 1: Probability Matrix for Survey 1					
Examined Standard	2016/2017 First Year Teachers to 2017/2018 First Year Teachers Chi2 Sign test P Value	2017/2018 First Year Teachers to 2018/2019 First Year Teachers Chi2 Sign test P Value	2016/2017 Supervisors of First Year Teachers to 2017/2018 Supervisors of First Year Teachers Chi2 Sign test P Value	2017/2018 Supervisors of First Year Teachers to 2018/2019 Supervisors of First Year Teachers Chi2 Sign test P Value	2017/2018 Supervisors of Third Year Teachers to 2018/2019 Supervisors of Third Year Teachers Chi2 Sign test P Value
3.1	**0.0274**	0.124	**0.041**	0.594	0.264
4.1	0.229	**0.0162**	**0.011**	0.153	0.88
4.2	0.055	**0.0301**	0.451	0.445	0.395
8.1	0.052	**0.013**	0.189	0.838	0.85
12.3	0.071	**0.004**	0.234	0.835	0.081

Domain	Standards from Survey 1
Learning Environments	Standard 3.1 Work with others to create environments that support individual and collaborative learning
Content Knowledge	Standard 4.1 Understand the central concepts, tools of inquiry, and structures of the discipline(s) I teach.
Content Knowledge	Standard 4.2 Create learning experiences that make these aspects of the discipline accessible and meaningful for students to assure mastery of the content.
Instructional Strategies	Standard 8.1 Understand a variety of instructional strategies.
Professional Dispositions	Standard 12.3 The teacher practices good judgment, flexibility, problem-solving skills, professional communication, and organization.

Categorical variable 1(cont.): Likert Responses in survey 2

Table 2: Probability Matrix Survey 2: First year teachers and their supervisors				
Examined Standard	2019/2020 First Year Teachers to 2020/2021 First Year Teachers Chi2 Sign test P Value	2020/2021 First Year Teachers to 2021/2022 First Year Teachers Chi2 Sign test P Value	2019/2020 Supervisors of First Year Teachers to 2020/2021 Supervisors of First Year Teachers Chi2 Sign test P Value	2020/2021 Supervisors of First Year Teachers to 2021/2022 Supervisors of First Year Teachers Chi2 Sign test P Value
6.2	0.1	0.315	0.765	0.89
6.4	no 2019 data	0.381	no 2019 data	0.99
8.1	0.305	0.835	**0.0189**	0.057
9.1	**2.34E-07**	0.324	0.384	0.2
9.2	no 2019 data	**0.0011**	no 2019 data	0.345
10.2	**1.10E-15**	0.229	0.289	0.131

Table 3: Probability Matrix Survey 2: Third year teachers and their supervisors				
Examined Standard	2019/2020 Third Year Teachers to 2020/2021 First Year Teachers Chi2 Sign test P Value	2020/2021 Third Year Teachers to 2021/2022 First Year Teachers Chi2 Sign test P Value	2019/2020 Supervisors of Third Year Teachers to 2020/2021 Supervisors of Third Year Teachers Chi2 Sign test P Value	2019/2020 Supervisors of Third Year Teachers to 2020/2021 Supervisors of Third Year Teachers Chi2 Sign test P Value
6.2	0.127	0.085	0.761	0.404
6.4	0.895	0.283	0.145	0.072
8.1	0.437	0.468	**1.45407E-05**	0.069
9.1	0.631	0.265	0.219	0.167
9.2	0.646	0.243	0.776	0.047
10.2	0.48	0.461	0.153	0.061

Domain	Standards from Survey 2
Assessment	Standard 6.2 - Use formative and summative classroom assessments that facilitate learning
Assessment	Standard 6.4 - Provide differentiated instruction and assessments that positively impact learning.
Instructional Strategies	Standard 8.1 - Incorporate digital tools and technologies into instruction.
Professional Learning and Ethical Practice	Standard 9.1 - Invite constructive feedback and respond positively.
Professional Learning and Ethical Practice	Standard 9.2 - Set and implement goals to improve practice
Leadership and Collaboration	Standard 10.2 - Respond to people, problems and crises effectively

Trends in first year teacher data

To find trends which align with the first decomposition question, “What are the trends in first year teacher data over time within the Likert responses to perceived frequency or proficiency of InTASC standards?” responses in categorical variable 1: responses to the Likert questions were analyzed. First year teachers were given a series of Likert response items to measure their perceived level of preparation in alignment with each of the InTASC standards. Survey language was changed between the 2018/2019 and the 2019/2020 academic years (see Appendix D), so results of the Exploratory Data Analysis process will be discussed in relation to survey 1 and to survey 2 respectively.

First year teacher data: Survey 1

When comparing the responses of like subgroups from one year to the next, a couple observations were be made. For starters, in survey 1 between the 2016/2017 and the 2017/2018 school years, only one of the 31 sub standards that first year teachers were presented resulted in a statistically significant difference. Sub standard 3.1 is part of the InTASC domain of fostering supportive learning environments. Specifically, the language on survey 1 is "The teacher works with others to create environments that support individual and collaborative learning." There was a *p* value of .0274. The proportion of first year teachers who responded "consistently" increased by five percent indicating a positive trend in perception in this area with a low probability of recurrence.

Conversely, between the 2017/2018 and the 2018/2019 school years, four of the 31 sub standards presented to first year teachers revealed statistically significant differences. Two of these standards focused on content knowledge, one on instructional strategies, and the last was professional dispositions. In sub standard 4.1, there was a *p* value of .01629. The frequency of responses to "consistent" increased by five percent. In sub standard 4.2, there was a *p* value of .030174. The frequency of responses to "consistent" increased by nine percent. Increases within both sub standards imply the participants' self-perception of content knowledge in these subgroups improved over time.

Sub standard 8.1, which discussed the knowledge of a variety of instructional strategies, had a *p* value of .01321. Unlike the aforementioned sub standards, the frequency of responses to "consistent" decreased by seven percent. In other words, first year teacher participant responses indicated that perceived preparedness in the area of

instructional strategies declined over time.

To corroborate this finding, the researcher examined the frequency of key words and phrases which relate to instructional strategies in the open response answers that first year teachers from the 2017/2018 and the 2018/2019 school years provided (see table 4).

Table 4: Frequency of terms used in open responses related to standard 8

	Curriculum	Differentiation	Engagement	Instructional Strategies	Planning	Standards	Technology
Number of instances the term appeared in responses of first year teachers in the 2017/2018 year	10	3	2	4	7	4	9
Number of instances the term appeared in responses of first year teachers in the 2018/2019 year	22	2	2	4	12	6	6

The phrase "curriculum" was incorporated in responses at a higher rate than other related phrases. While the perception of preparedness in standard 8 decreased in categorical variable 1, the frequency of the terms "curriculum" and "planning" increased in open responses from categorical variable 2 thus representing a negative correlation that indicates a perceived need. The following are examples of open responses in context:

"More experience on researching and developing curriculum to teach would have been useful."

"I also felt underprepared in the area of understanding curriculum and creating curriculum-based goals."

"…it would be more practical to teach prospective teachers how to enhance curriculum for engagement on a daily basis."

"I feel the need of learning the actual curriculum is so important. I did not feel

ready to be handed a full curriculum and how to navigate the pacing of that."

The insights of first year teachers regarding curriculum relates to instructional strategies in that one must know what and when to teach something before honing their skills around *how* to teach it.

The last area of significance for survey 1 responses of first year teachers was in sub standard 12.3: The teacher practices good judgment, flexibility, problem-solving skills, professional communication, and organization. Comparison of sample responses of first year teachers to this standard between the 2017/2018 and 2018/2019 school years revealed a *p* value of .01321, where the frequency of responses to "consistent" decreased by seven percent. First year teachers' perception of preparedness of inter and intrapersonal skills in an educational setting was therefore trending negatively over time.

Because of the decrease in categorical variable 1, the researcher examined frequency of terms relating to professional dispositions which appeared in the open response data of first year teachers as well as those of supervisors of first year teachers in the area of standard 12 (see table 5).

Table 5: Frequency of terms used in open responses related to standard 12

	Interpersonal skills	Reflection	Organizational Skills	Collaboration	Confidence	Parent	Relationship	Communicate	Professionalism
Number of instances the term appeared in responses of first year teachers in the 2017/2018 year	0	5	1	2	1	11	3	2	1
Number of instances the term appeared in responses of first year teachers in the 2018/2019 year	1	1	3	1	3	6	4	6	3
Number of instances the term appeared in responses of supervisors of first year teachers in the 2017/2018 year	1	0	2	5	2	8	7	4	6
Number of instances the term appeared in responses of supervisors of first year teachers in the 2018/2019 year	1	2	1	5	1	2	4	2	7

Unlike standard 8, the two categorical variables did not convey a strong corroboration in perception over time. In many areas, the frequency of terms associated with professional disposition decreased in responses of first year teachers between the 2017/2018 and the 2018/2019 year which may be interpreted as a decreased perception of need. However, responses of supervisors within these same years were included for additional interpretive analysis of categorical variable 2.

While the frequency of terms used showed no significant changes over time, "parent" was used frequently in both years by both first year teachers and by supervisors of first year teachers. It can be interpreted that both first year teachers and their supervisors perceived relationships or communication with parents as a suggested area of opportunity for teacher education programs.

Another observation between the two subsamples was supervisors of first year teachers mention "collaboration" and "professionalism" as areas of need in teacher preparation programs while the first year teachers themselves do not. The researcher could deduce that supervisors' open responses point out areas of need where first year teachers may be unaware of a need.

The following are terms which relate to inter and intrapersonal dispositions in the context of the responses of first year teachers:

> "I think more focus should be put on classroom management, and school culture (i.e: how to work with other teachers, administrators, and how to handle tough situations in a professional manner)"
>
> "Have [preservice teachers] work on communicating with others in a professional setting. Being able to communicate with the resource [teachers], ELL or

even the administrations is something every teacher will have to do."

"More instruction for future educators on how to communicate effectively with parents."

"More collaboration experiences to prepare for working with other colleagues."

Supervisors of First Year Teachers Responses in Context

"Please focus on professional duties and emphasize the importance, especially with collaborating."

[there is a need for focus on] "Professionalism, interpersonal skills, and work environment sensitivity."

[the first year teacher in question] "could improve in collaborating with parents and other staff members."

The trends in first year teacher data over time within the Likert responses to perceived frequency of InTASC standards demonstrated mixed results. The perception of preparedness of first year teachers had a positive trend over time in the areas of content knowledge and learning environments, but it had a negative trend over time in the areas of instructional strategies and professional dispositions.

First year teacher data: Survey 2

Survey 2 contained language in the rank-based, Likert scale questions regarding InTASC sub standards that was different than survey 1. Rather than measuring the perceived frequency that a standard was met, survey 2 measured the perceived level of proficiency in which a standard was performed. The language change caused a shift in the proportion of responses overall; survey 1 contained a higher number of responses for

"consistent" (the highest possible ranking) while survey 2 contained a higher number of responses for "proficient" (the second highest ranking). Also to note is that the survey presented to first year teachers in the 2019/2020 school year contained only fifteen of the possible twenty-five items on the later surveys.

Data sets from survey 2 responses of first year teachers revealed six standards which met the two criteria: a variance of ≥ or ≤ 5 percent between academic years in at least half of the presented surveys. The researcher conducted Chi-squared analytics for all six, and three revealed significance for first year teachers.

For instance, comparisons between the 2019/2020 school year and the 2020/2021 school year revealed noteworthy differences in standards 9.1 and 10.2. The first of these falls in the standard of Professional Learning and Ethical practice: Invite constructive feedback and respond positively. The *p* value was $2.33802578944776e^{-7}$. The frequency of responses to "advanced" decreased by sixteen percent between the 2019/2020 and the 2020/2021 school years. Alternately, where only two percent had indicated a level of preparedness as "developing" in the 2019/2020 year, the proportion changed to nine percent in the 2020/2021 year. The perception of preparedness of first year teachers for standard 9.1 therefore showed a negative trend over time.

Standard 10.2: Respond to people, problems and crises effectively, also showed a significant difference. The *p* value was $1.10256667466542e^{-15}$. The frequency of responses to "advanced" decreased by twenty-three percent between the 2019/2020 and the 2020/2021 school years. Like the previous standard, the responses shifted to "developing" increasing that ranking by fifty-eight percent. First year teacher perception of preparedness showed a significantly negative trend over time.

Table 6: Frequency of terms used in open responses related to standard 9

	Professionalism	Self reflecting/ reflection
Number of instances the term appeared in responses of first year teachers in the 2019/2020 year	3	0
Number of instances the term appeared in responses of first year teachers in the 2020/2021 year	3	4
Number of instances the term appeared in responses of first year teachers in the 2021/2022 year	2	1

Another area of statistical significance for first year teachers in survey 2 responses was in a comparison between the 2020/2021 and 2021/2022 school years. Sub standard 9.2: Set and implement goals to improve practice had a *p* value of 0.001101. The frequency of responses to "advanced" for standard 9.2 decreased by nearly six percent. Because two of the significant differences were found in standard 9: Professional Learning and Ethical Practice, the researcher examined word frequencies in relation to this standard over the three years of data (see table 6).

There was an increase in the instances where "reflection" was used by first year teachers, however, the instances decreased the following year. More specific use of "reflect" or "reflection" appeared in the following context:

> "More constructive criticism could be helpful for future teachers to really reflect on how they can improve their lesson plans…"

The term which demonstrated a significant increase as it related to standard 10: Leadership and Collaboration was "parent communication." The frequency of use by first year teachers increased from five in 2019/2020 to seventeen in 2020/2021 and then to

twenty-two in 2021/2022. In the context of open responses, the following are a few examples:

> "It would be helpful to know some tips or strategies on talking with parents."
>
> "Communicating with parents was another thing I didn't feel trained on at all."
>
> "I did not feel like I was prepared for after my experience at [institution] was parent communication and how to document it."
>
> "There needs to be more comprehensive conversations around … having difficult conversations with parents."

It can be interpreted that first year teachers' decreased perception of preparedness in the InTASC category of professional responsibility corroborates with open responses because the rate in which a need was indicated for additional preparation in communication and crisis management increased.

Trends in third year teacher data

Categorical variable 1 data from both survey 1 and survey 2 revealed no significant findings to address the next decomposed question, "What are the trends in third year teacher data over time within the Likert responses to perceived frequency or proficiency of InTASC standards?" To note is that only survey 2 sample responses were analyzed because the researcher did not have data for more than one year of data within the timeline for survey 1. That said, the trend for perceptions of preparedness of third year teachers presented as more predictable than the perception of preparedness in teachers in their first year of teaching the implications of which are addressed in the discussion.

Because there were no significant outliers for the first data, no analysis was subsequently done on word frequencies within open responses for this sample subgroup.

Trends in data from supervisors of first year teachers

The data for the perception of preparedness of first year teachers by their supervisors revealed similarities to the outcomes of first year teachers in a few areas. Survey outcomes for supervisors of first year teachers revealed some significant differences which can address the decomposition question, “What are the trends in data from supervisors of first year teachers over time within the Likert responses to perceived frequency or proficiency of InTASC standards?” As with data from first year teachers, the following outcomes are addressed as they relate to either survey 1 or to survey 2.

Supervisors of first year teacher data: Survey 1

Of the comparisons made within survey 1, responses between the 2016/2017 and 2017/2018 school years revealed two areas of significance in responses from supervisors of first year teachers. The first of these was in standard 3.1: The teacher works with others to create environments that support individual and collaborative learning. The *p* value of .041 indicated a mildly significant trend over time. As a reminder, survey 1’s ranked response language measured the perception of how *often* a standard was met by the teacher. In this case, the perception of supervisors of first year teachers revealed a positive trend over time in that the frequency of responses to "consistent" increased by 5.6% indicating a perception of growth in first year teachers between the two academic years.

The other standard which indicated significance in survey 1 was standard 4.1: The teacher understands the central concepts, tools of inquiry, and structures of the

discipline(s) he or she teaches. Like the standard before it, the difference between the 2016/2017 and 2017/2018 school years indicated that the perception of supervisors of first year teachers had a positive trend over time. The outlying *p* value of .01068 indicated significance in the seven percent increase in the frequency of responses to "consistent." It can be interpreted that the perception of supervisors of first year teachers regarding how prepared first year teachers were in the area of content knowledge had a positive trend over time.

Because both areas of statistical significance yielded a positive trend in perception, no additional analysis of open responses was conducted. Open response data is indicative of the participant's perception regarding what could be changed or adjusted to strengthen teacher preparation programs and therefore more strongly corroborates Chi-squared analytics in which there is a decreased valuation.

Supervisors of first year teacher data: Survey 2

To review, survey 2's rank response language measured the level of perceived proficiency for the practice in question rather than how often the standard was met thus making "proficient" (the second in rank) the more commonly selected response across all data sets. Comparisons of the data in survey 2 from supervisors of first year teachers revealed one significant outlier in standard 8.1: Incorporates digital tools and technologies into instruction. Between the 2019/2020 and the 2020/2021 school year, perceptions of supervisors of first year teachers conveyed a positive trend in this area. The *p* value was 0.0189. The frequency of responses to "advanced" increased by five percent which implies there was a positive trend in the perception of supervisors of first year teachers regarding this practice. Implications for the rationale of this are discussed in

the next chapter. Like survey 1, no data from the first categorical variable revealed a negatively impacted perception, so no additional analysis was conducted on open response data.

Trends in data from supervisors of third year teachers

The final subgroup to be examined was supervisors of third year teachers. There were two areas of significance to address the question, "What are the trends in data from supervisors of third year teachers over time within the Likert responses to perceived frequency or proficiency of InTASC standards?" Both of these statistical outcomes were found in survey 2. Survey 1 data revealed no statistical outliers.

In survey 2, the first standard which revealed significance was 8.1: Incorporates digital tools and technologies into instruction. Between the 2019/2020 and the 2020/2021 school years, this standard exceeded the critical value by an exponential amount making the p value $1.45407e^{-05}$. The frequency of responses to "advanced" by supervisors of third year teachers increased by eleven percent indicating a positive trend for this standard over time.

The other standard in survey 2 which yielded significant results was in the comparisons between the 2020/2021 and 2021/2022 school years. The perception of supervisors of third year teachers had a significant change in standard 9.2: Sets and implements goals to improve practice. The p value was 0.04694. The perception of supervisors of third year teachers showed a positive trend in that the frequency of responses to "advanced" in this area increased by thirteen percent. Because of the positive trend in both of the observed standards, no additional analysis was conducted over the open response data.

Additional Analysis

Two standards which emerged as statistically significant over time repeated in different subgroups within like years. As is the nature of EDA, the researcher ran the two through another series of Chi-squared tests of independence to determine whether there was statistical significance in a comparison of the two subgroups for each standard.

In survey 1, standard 3.1: The teacher works with others to create environments that support individual and collaborative learning, was found to be statistically significant between the 2016/2017 and 2017/2018 school years for both first year teachers as well as for supervisors of first year teachers, and each revealed in upward trend. Comparison with Chi-squared analytics of the two subgroups revealed there was a statistical significance between first year teachers and supervisors of first year teachers in the 2017/2018 school year with a p value of .0134.

The other standard that repeated was in survey 2. Standard 8.1: Incorporates digital tools and technologies into instruction. In the comparisons between the 2019/2020 and 2020/2021 school years, both supervisors of first year teachers as well as supervisors of third year teachers proved to have statistical significance for this standard. Comparison of supervisors of first year teachers and supervisors of third year teachers did not reveal significant outcomes in the 2019/2020 year, but, in the 2020/2021 year, there was a statistical significance with a p value of $7.38363e^{-05}$. Rationale for this finding is discussed in the following chapter.

Chapter 5: Discussion

This modified Exploratory Data Analysis (EDA) study intended to address potential trends in perceived preparedness within the Interstate Teacher Assessment and Support Consortium (InTASC) professional standards. The Nebraska Department of Education (NDE) developed specific indicators or sub standards which were the basis for the majority of the questions presented to participants. Participants were beginning teachers and supervisors of beginning teachers. Data from a previously administered survey was analyzed. Twenty-one data sets from four subgroups were delineated into underlying categories. Then, exploratory analytics were applied with attention to outliers within data sets. The following is a summary of observed outcomes and a discussion of implications.

Summary of Results

Several outcomes were observed during this study. For instance, there was a positive trend in the perception of preparedness among first year teachers in the specific areas of the learning environment and in content knowledge. Over time, it seems confidence increased in these areas. First year teachers know what to teach, and they generally feel prepared to create an optimal learning environment. Data trends from supervisors of first year teachers also demonstrated a heightened perception of preparedness in content knowledge and learning environments. It can be interpreted, then, that teacher preparation programs in Nebraska have provided coursework and experiences which have prepared first year teachers so that they meet or exceed indicators for these standards.

Conversely, trends in data from first year teachers in earlier sets indicated that

there is a perceived deficit in preparedness of implementing a variety of instructional strategies. Frequency analytics revealed corroborative findings in areas of need for curriculum and planning within the same data sets.

Trends in data from both surveys also indicated that first year teachers have a lowered sense of confidence in areas of the teaching profession which require both interpersonal and intrapersonal skills. Perceived preparedness in sub standards with language such as “good judgement,” “problem solving,” “goal setting,” and “response to crisis” trended negatively over time. Open response data from first year teachers conveyed a need for additional preparation specifically in competencies relating to parent communication and collegial collaboration. Particularly, sub standard 10.2: Responds to people, problems, and crisis effectively, experienced a heavy shift between the 2019/2020 school year, when the COVID-19 pandemic began, and the 2020/2021 school year. The steep decline in perceived preparedness was likely influenced by the external factors which impacted the professional practice for everyone in education. However, despite the possible influence of COVID-19, the trend in self-reported preparedness within the InTASC category of Professional Responsibility revealed implications for further discussion.

No statistical significance regarding Professional Responsibility was revealed by supervisors of beginning teachers; however, frequency analytics of open response data revealed that supervisors of first year teachers also believe there is a need to adjust teacher education programs to better equip preservice teachers with social competencies as they relate to the profession. The researcher acknowledges the interpretive nature of the open responses as an independent data point. With this in mind, it can be said that

there are corresponding outcomes which emerged in the present study between first year teachers and their supervisors that imply there is a need to adjust teacher preparation programs in Nebraska to better address indicators within the InTASC category of Professional responsibility.

Another outcome that emerged in the EDA process was supervisors' perception of preparedness in instructional strategies. More specifically, there was statistical significance found when comparing the 2019/2020 school year, when the COVID-19 pandemic began, to the 2020/2021 school year, when the very nature of education drastically changed. The 2020/2021 cohort of Nebraska first and third year teachers were tasked with teaching in various online and virtual formats, or these teachers had to adapt to a hybrid format in which students were both in the classroom and connected virtually. It was in this year that supervisors of beginning teachers perceived a stronger level of preparedness in using digital tools within instruction for both first year and third year teachers. It is suggested that part of this statistical anomaly is because perception was impacted by external factors. During the effected school years, teachers, regardless of years of experience, were asked to teach in an unconventional setting which required a depth of knowledge in utilizing digital tools in order to promote engagement and rigor in a "virtual classroom" setting. It is likely that supervisor perceptions of increased proficiency when integrating digital tools were influenced by the aforementioned factors.

One final outcome to note is the lack of statistical significance in the perception of preparedness in third year teachers. Data suggests that perceived preparedness of third year teachers is relatively predictable over time.

The InTASC standards served as the conceptual framework for the present study

while Tukey's (1977) guidelines for exploratory data analysis served as a type of roadmap for the researcher. Though methods of analysis for the study were entirely quantitative in nature, it is necessary to point out that outcomes are inconclusive and interpretive. The intention of EDA is to employ various analytics to specific data as a means of revealing items which warrant further investigation, so no definitive answer to a research question can logically be given. Therefore, the discussion in the following section presents what the researcher has interpreted as noteworthy trends in perceptions of preparedness of beginning teachers by teachers and by teacher supervisors in Nebraska. Ultimately, the relevance and implications for future studies is expressed.

Discussion

The primary data focus was self-reported ranked responses which some may argue is too subjective in nature. The researcher refutes the possibility of subjectivity within the present study because of the data size. In total twenty-one data sets contained 9,818 responses with an average of 467 responses within a given data set. It is unknown whether participants were represented in more than one data set because identifiers were eliminated to ensure anonymity. As an example, a first year teacher who responded in the 2016/2017 school year may have also responded to the survey as a third year teacher in the 2019/2020 school year. There were also approximately 4,000 responses to the open question. Strategies for analysis were conducted with intentionality in order to produce justifiable outcomes. These outcomes were compared to what the literature for teacher preparation had previously established.

The observed outcomes within the present study reinforce ideas found in recent research. For instance, the present study illustrated that while beginning teachers feel

adequately prepared in their content and classrooms, they need more preparation in competencies which are more complex in nature. A positive perception of proficiency in content knowledge reiterates the findings of Chaney et al. (2020) and reinforces the notion that teacher preparation programs are adequately preparing preservice teachers in the InTASC categories of Content Knowledge and Learning Environments.

There are two InTASC standards which emerged as areas of additional inquiry for the researcher. Standard 9: Professional Learning and Ethical Practice and Standard 10: Leadership and Collaboration are both part of the Professional Responsibility category. Survey 1 also contained a separate, NDE specific standard called Professional Dispositions. Thematically, the indicators (sub standards) within these standards describe professional duties which extend beyond those in the classroom.

The InTASC category of Professional Responsibility lists critical knowledge and dispositions of teachers which require skills where, as Cartesen and Klusmann (2021) discuss, empirical research is found more within the realm of psychology rather than in education. Beginning teachers have a responsibility to master and navigate some of the more tacit elements of the teaching profession. In practice, this means they must collaborate with paraprofessionals, resource teachers, professional learning communities (PLC's), and families. Additionally, teachers are expected to demonstrate professional agency and adjust their patterns of communication to ensure empathy, compassion, and sensitivity toward their audiences (CCSSO, 2013). The nuanced tight-rope of any organizational culture can be difficult to conquer for anyone if they are not well prepared.

Researchers have begun using *social-emotional competencies* as an all-encompassing phrase to describe the intricate qualities that are required of a

"professional" educator. Ramos and Hughes (2020) indicate that these competencies are crucial especially when beginning teachers are placed in settings where there are socioeconomic disparities, disproportional achievement, and cultural diversity. Beginning teachers who do not innately possess social-emotional competencies are more likely to struggle which causes a lowered sense of self-efficacy (Hong, 2012). This is often the case when those who are new to the profession are unfamiliar with not only the culture and customs of the students they serve, but they are also unfamiliar with the values and beliefs of the stakeholders in the immediate school community.

Response outcomes from first year teachers in the current study showed a negative trend in perceived preparedness over time in the category of Professional Responsibility. If mastery of the sub standards from the Professional Responsibility category requires adequate social-emotional competence, then it can be insinuated that first year teachers have a perceived deficit in social-emotional competencies in relation to the teaching profession. Nebraska's preservice teachers need teacher preparation programs with impactful curriculum specifically regarding indicators of Professional Responsibility.

From the inception of the public school system, it was recognized that effective teachers needed to have both critical knowledge as well as the aptitude to teach it (Mann, 1840). The picturesque one-room schoolhouse with various ages of children with their slates being warmed by a wood burning stove while a single teacher gave autonomous instruction has fervently evolved. Education is no longer structured in a way that allows teachers to compartmentalize their work as if it were detached from aspects of life beyond the classroom. Accountability measures from every possible level combined with

real-time systems of checks and balance have created an educational system that requires more of teachers than just critical knowledge and the ability to teach it.

In the current educational climate, beginning teachers not only need to possess the skills required to teach, but they need to be instilled with an awareness of societal expectations as well as with the social-emotional competencies which will help them reach these expectations. When faced with the very real challenges of teaching, beginning teachers need tools which can assist in reframing the perceived level of severity within a conflict or an intense situation (Ballantyne et al., 2020).

There are an infinite number of rewards in teaching, however, in today's public school setting, a beginning teacher will have to contend with negative colleagues, abrasively reactive parents, aggressively behaved students, unanticipated duties, or any number of distressing events from day to day. These trials are all in addition to the responsibility of planning and implementing lessons, providing quality and differentiated instruction, giving meaningful and timely feedback, and assessing their students' learning to begin again the next day. Teaching is a human-based, emotional profession, so beginning teachers need strategies that will help them recover from emotionally charged situations. These micro-traumas degrade self-efficacy and instructional quality over time. (Mansfield et al., 2016; Hong, 2012).

To add to this, teachers in the 2019/2020 and 2020/2021 school years were often referred to as first responders which has traditionally been associated with caregivers of trauma victims. Granted, research prior to the pandemic points out that teachers have always been first responders of students who experience trauma in their home. Socioeconomically disadvantaged students carry invisible burdens that can impact not

only their learning but also the learning of others. To adequately support and understand students from adverse backgrounds, emotional regulation strategies and the ability to access intrapersonal resources are therefore necessary for preparation of beginning teachers (Mansfield et al., 2016; Cameron & Lovett, 2014). Mansfield et al. (2016) point out that coping strategies such as problem solving, resilience, empathy, and emotional regulation, can mitigate burnout and emotional exhaustion which has been indentified as a contributing factor to increased attrition (Ingersoll, 2003). In effect, those teachers who lack social-emotional competence which relate to the InTASC category of Professional Responsibility are more likely to contribute to the growing attrition problem (Cartesen & Klusmann, 2021).

The relationship between social-emotional competencies and teacher preparation have been examined in recent years, especially with the onset of the COVID-19 crisis. There has been development of conceptual frameworks to help measure abstract ideas like problem solving skills, social competencies, and resilience. Ballantyne et al. (2020) have found that perceptions of preparedness in beginning and preservice teachers demonstrates a positive trend when they also perceive they are well equipped with skills for “authentic” problem solving, for interpersonal relationship building, flexibility and adaptability. Targeted curriculum in teacher preparation programs which address social-emotional competencies could be a key in addressing the attrition problem within the teacher workforce.

In the present study, frequency analytics showed a perceived need for additional preparation specifically in relationships with the families of students by both beginning teachers and by supervisors of beginning teachers. This aligns with Miller et al. (2013)

who found a disconnect between course offerings which address school-family relations and perceived importance of these relationships when it comes to student achievement. In other words, preservice teachers recognize the importance of relationships with all stakeholders in the educational setting, however, there are limited courses which explicitly teach preservice educators *how* to build sustainable relationships. In their more recent research, Luke and Vaughn (2021) also argue that traditional teacher preparation programs provide limited opportunities to practice collaboration with colleagues and families despite the evidence based need for these skills in the profession.

The elements which comprise the Professional Responsibility category within the InTASC standards have a direct relationship with social-emotional competencies of preservice teachers. The present EDA study emphasized what several researchers have found. There is a need for targeted curriculum in teacher preparation programs which provides opportunities develop social-emotional competencies as they relate to the teaching profession.

Implications for Future Studies

There is potential for future studies. To begin, the depth and breadth of the data provided for this study gives way for further examination. Specifically, thematic coding could be applied to the responses to the open question. Responses by all sub groups named positive qualities of preparation from the represented institution while others named specific areas within the professional standards where they felt the institution did not prepare them. By more intensively coding these responses and cross referencing them for thematic patterns, additional conclusions regarding perceived preparedness of beginning teachers within the InTASC framework could emerge.

The initial “raw” data included names of specific teacher preparation institutions. Through more in-depth investigation, positive trends in perceived preparedness can be traced to specific Nebraska teacher preparation programs. Positive trends in perceived competency would indicate there are effective facets of programming in the areas of coursework, experiential learning opportunities, and/or agreements between the institution and neighboring school districts. Future studies could ultimately reveal targeted curriculum or frameworks which are already in use and proving to be effective in Nebraska teacher preparation programs.

Limitations

In lieu of a structured set of procedures which dictates an “all or nothing” approach to data analysis, the researcher utilized a more vague set of procedures. Several sub standards presented a five percent (and therefore noteworthy) variance that the researcher did not analyze because the study was intended to be explorative. By narrowing the analytics with criteria which was developed in tandem with study progression, the number of statistical permutations which could have been examined was limited. This was intentional on the part of the researcher. The possible number of permutations a researcher could produce with the depth and breadth of the available data are, quite frankly, too many to attempt in one focused study.

Conclusion

As outlined in the early part of this work, teacher attrition has become a concerning problem that the recent pandemic exacerbated. The purpose of the present study was to better understand one of the many facets of the teacher pipeline by examining teacher preparation. Tukey’s (1993) Exploratory Data Analysis was used

because the hope was to uncover outcomes which might inform future studies of inquiry. It was through this process that the researcher was able to derive a general conclusion that teacher preparation programs in Nebraska need to provide targeted curriculum to prepare the next generation of teachers so that they can master the indicators of Professional Responsibility. Ultimately, adequate preparation of preservice teachers with a focus on social-emotional competencies within the teaching profession could provide relief from the attrition of Nebraska's teacher workforce.

References

1990. *Progress of Education in the United States of America 1984 through 1989*. U.S. Department of Education.

1996. *What Matters Most: Teaching for America's Future*. New York, N.Y.: National Commission on Teaching & America's Future.

AACTE (2013). *The Changing Teacher Preparation Profession*. American Association of Colleges for Teacher Education. Washington D.C. Retrieved April 18, 2022 from file:///C:/Users/cdestefano/Downloads/AACTE%202013%20PEDS%20Report.pdf

Ambach, G. (1996). Standards for teachers. (cover story). *Phi Delta Kappan*, 78(3), 207.

American Association of Colleges for Teacher Education. (2020, April). *Member survey on the coronavirus impact & response*. AACTE.

Arviv Elyashiv, R. & Navon, Y. (2021). Teacher attrition: Human capital and terms of employment – Do they matter? *Education Policy Analysis Archives*, 29(76). https://doi.org/10.14507/epaa.29.5965.

ASCD (2015) *Elementary and Secondary Education Act: Comparison of the No Child Left Behind to the Every Student Succeeds Act*. Retrieved April, 2022 from https://files.ascd.org/staticfiles/ascd/pdf/siteASCD/policy/ESEA_NCLB_ComparisonChart_2015.pdf.

Ballatyne, J., Flynn, L., & Olm-Madden, T. (2020) Problem-Seeking in Teacher Education: Empowering Students to Grapple with the Complexities of the Profession. *Australian Journal of Teacher Education*, 45(5), 38-61. Retrieved January 21, 2023 from https://files.eric.ed.gov/fulltext/EJ1261064.pdf.

Banghart, K. (2021, January) Teacher Recruitment and Retention in Rural Colorado. *State Education Standard*, 21(1), 29-32.

Beck, J. S., Lunsmann, C., & Garza, T. (2020) "We Need to Be in the Classroom More": Veteran Teachers' Views on Teacher Preparation and Retention. *The Professional Educator*, 43 (1), 91-99. https://files.eric.ed.gov/fulltext/EJ1276199.pdf.

Bell, P., & Busey, C. L. (2021). The Racial Grammar of Teacher Education: Critical Race Theory Counterstories of Black and Latina First-Generation Preservice Teachers. *Teacher Education Quarterly*, 48(1), 33–56.

Bernhardt, V. L. (n.d.) *ASSESSING PERCEPTIONS: Using Education for the Future Questionnaires*. Education for the Future, Chino, CA.

Boogren, T. H. (2015) *Supporting Beginning Teachers*. Marzano Research.

Carroll, T. G. (2007). Policy brief: The high cost of teacher turnover. Washington, DC: National Commission on Teaching and America's Future. Retreived April 3, 2022 from https://eric.ed.gov/?id=ED498001.

Carstensen, B., & Klusmann, U. (2021). Assertiveness and adaptation: Prospective teachers' social competence development and its significance for occupational well-being. *British Journal of Educational Psychology*, *91*(1), 500–526. https://doi-org.leo.lib.unomaha.edu/10.1111/bjep.12377

Carver, M. (2021) Survey Methods to Identify Risk of Attrition: Measures of Career Intention and Regret. *Education Sciences,* 11 (617), 1-12. https://doi.org/10.3390/educsci11100617.

Carver-Thomas, D. (February, 2022) Teacher Shortages Take Center Stage. Learning Policy Institute. Retrieved April 30, 2022 from https://learningpolicyinstitute.org/blog/teacher-shortages-take-center-stage.

Chaney, B., Braun, H., & Jenkins, F. (2020). Novice middle school teachers' preparedness for teaching, and the helpfulness of supports: A survey of one state. *Education Policy Analysis Archives*, 28(107). https://doi.org/10.14507/epaa.28.5001

Cochran-Smith, M., & Villegas, A. M. (2015). Framing Teacher Preparation Research: An Overview of the Field, Part 1. *Journal of Teacher Education*, 66(1), 7–20. https://doi-org.leo.lib.unomaha.edu/10.1177/0022487114549072.

Council of Chief State School Officers (2011, April). Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards: A Resource for State Dialogue. Washington, DC: Author.

Council of Chief State School Officers (2013). Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards and Learning Progressions for Teachers. Washington, DC: Author. Retrieved from https://ccsso.org/sites/default/files/2017-12/2013_INTASC_Learning_Progressions_for_Teachers.pdf.

Courtney, M. B. (2021) Exploratory Data Analysis in Schools: A Logic Model to Guide Implementation. International Journal of Education Policy and Leadership, 17(4), 1-14. Retrieved May 4, 2022 from https://files.eric.ed.gov/fulltext/EJ1299592.pdf.

Darling-Hammond, L. (2000) Teacher Quality and Student Achievement: A Review of State Policy Evidence. *Education Policy Analysis Archives*, 8(1), 1-44.

Darling-Hammond, L., Chung, R., & Frelow, F. (2002). Variation in teacher preparation: how well do different pathways prepare teachers to teach? *Journal of Teacher Education*, 53(4), 286–302. https://doi.org.leo.lib.unomaha.edu/10.1177/0022487102053004002

Choate, K., Goldhaber, D., & Theobald, R. (2021). The effects of COVID-19 on teacher preparation. *Phi Delta Kappan*, 102(7), 52–57. https://doi.org/10.1177/00317217211007340.

Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Vasquez Heilig, J. (2005). Does Teacher Preparation Matter? Evidence about Teacher Certification, Teach for America, and Teacher Effectiveness. *Education Policy Analysis Archives*, 13, 42. https://doi.org/10.14507/epaa.v13n42.2005

DeLuca, C. (2012). Preparing Teachers for the Age of Accountability: Toward a Framework for Assessment Education. *Action in Teacher Education* (Association of Teacher Educators), 34(5/6), 576–591. https://doi-org.leo.lib.unomaha.edu/10.1080/01626620.2012.730347

Deng, Q., Kananu Kiramba, L., & Viesca, K. M. (2021) Factors Associated With Novice General Education Teachers' Preparedness to Work With Multilingual Learners: A Multilevel Study. *Journal of Teacher Education*, 74(4), 489-503

DeNisco, A. (2019) Rural districts tackle declines and shortages. *District Administration*. Districtadministration.com

Effective professional development. (2001). *Kappa Delta Pi Record*, 38(1), 12–34.

Elyashiv, R. A. (2019) School and District Leaders Talk about Teacher Attrition. *Journal of Curriculum and Teaching*, 8 (3). https://doi.org/10.5430/jct.v8n3p160

Gray, L., & Taie, S. (2015). Public school teacher attrition and mobility in the first five years: Results from the first through fifth waves of the 2007-08 Beginning Teacher Longitudinal Student: First look (NCES 2015-337). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. https://eric.ed.gov/?id=ED556348

Gunther, J. (2019). Quantifying the Value Teachers Place on Non-Monetary Factors When Evaluating Job Opportunities. *Education Policy Analysis Archives*, 27(44–46), 1–31. https://doi-org.leo.lib.unomaha.edu/10.14507/epaa.27.4276.

Hill, D., Stumbo, C., Paliokas, K., Hansen, D., & McWalters, P. (2010, July). State policy implications of the Model Core Teaching Standards (InTASC Draft Discussion Document). Washington, DC: Council of Chief State School Officers.

Ingersoll, R. M., & Strong, M. (2011). The Impact of Induction and Mentoring Programs for Beginning Teachers: A Critical Review of the Research. Review of Educational Research, 81(2), 201–233. https://doi-org.leo.lib.unomaha.edu/10.3102/0034654311403323

Ingersoll, R., May, H., & Collins, G. (2019). Recruitment, employment, retention and the minority teacher shortage. *Education Policy Analysis Archives*, 27(37).

Ingersoll, R., Merrill, L., & May, H. (2014). What Are the Effects of Teacher Education Preparation on Beginning Teacher Attrition? Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania. Retreived April 3, 2022 from https://eric.ed.gov/?id=ED575353.

Ji Y. Hong (2012) Why do some beginning teachers leave the school, and others stay? Understanding teacher resilience through psychological lenses. *Teachers and Teaching*, 18(4), 417-440, DOI: 10.1080/13540602.2012.696044.

Jorgensen, M., & Hoffmann, J. (2003) *History of the No Childe Left Behind Act of 2001 (NCLB)*. Harcourt.

Kini, T., & Podolsky, A. (2016). Does teaching experience increase teacher effectiveness? Palo Alto, CA: Learning Policy Institute.

Kutsyuruba, B., Walker, K., Al Makhamreh, M., & Stroud Stasel, R. (2018) Attrition, Retention, and Development of Early Career Teachers: Pan-Canadian Narratives. *In education*, 24(1), 43-71.

Lacireno-Paquet, N., Bocala, C., Fronius, T., & Phillips, D. (2012) The characteristics and experiences of beginning teachers in seven Northeast and Island Region states and nationally (REL 2012-No. 133). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast and Islands.

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher Sorting and the Plight of Urban Schools: A Descriptive Analysis. *Educational Evaluation & Policy Analysis*, 24(1), 37–62. https://doi-org.leo.lib.unomaha.edu/10.3102/01623737024001037

Larson, K. E., Pas, E. T., Bradshaw, C. P., Rosenberg, M. S., Day-Vines, N. L. (2018) Examining How Proactive Management and Culturally Responsive Teaching Relate to Student Behavior: Implications for Measurement and Practice. *School Psychology Review*, 47(2), 153-166. https//doi.org/10.17105/SPR-2017-0070.V47-2

Lerner, J., Roberts, G. J., Green, K., & Coleman, J. (2021). Prioritizing competencies for beginning teachers in high-poverty schools: A Delphi study. *Educational Research: Theory and Practice*, 32(2), 17-46.

Lewin, T. (2011). Training of Teachers is Flawed, Study Says. *The New York Times*. New York, NY: The New York Times Company. Retrieved April 18, 2022 from https://www.nytimes.com/2011/07/21/education/21teaching.html.

Lindsay, J., Jiang, J., Wan, C., & Gnedko Berry, N. (2021) Supports Associated with Teacher Retention in Michigan (REL 2021-108). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest.https://go.usa.gov/xMxVU.

Luke, S. E., & Vaughn, S. M. (2022). Embedding Virtual Simulation Into a Course to Teach Parent–Teacher Collaboration Skills. Intervention in School and Clinic, 57(3), 182–188. https://doi-org.leo.lib.unomaha.edu/10.1177/10534512211014873

Mansfield, Beltman, S., Broadley, T., & Weatherby-Fell, N. (2016). Building resilience in teacher education: An evidenced informed framework. *Teaching and Teacher Education*, *54*, 77–87. https://doi.org/10.1016/j.tate.2015.11.016

Martin, S. D., & Dismuke, S. (2018). Investigating Differences in Teacher Practices Through a Complexity Theory Lens: The Influence of Teacher Education. *Journal of Teacher Education*, 69(1), 22–39. https://doi-org.leo.lib.unomaha.edu/10.1177/0022487117702573

Mehta, J. (2013). How Paradigms Create Politics: The Transformation of American Educational Policy, 1980–2001. *American Educational Research Journal*, 50(2), 285–324. https://doi-org.leo.lib.unomaha.edu/10.3102/0002831212471417

Mehta, J. (2015). Escaping the Shadow: A nation at risk and its far-reaching influence. *American Educator*, 20-44. Retrieved April 17, 2022 from https://files.eric.ed.gov/fulltext/EJ1064157.pdf

Meyer, S. J., Espel, E. V., Weston-Sementelli, J. L., & Serdiouk, M. (2019). Teacher retention, mobility, and attrition in Colorado, Missouri, Nebraska, and South Dakota. (REL 2019–001). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central. Retrieved from http://ies.ed.gov/ncee/edlabs.

Moir, E. (1999). The Stages of a Teacher's First Year. In S. Villani (Ed.), Mentoring Programs for New Teachers: Models of Induction and Support (p. 6). Thousand Oaks, CA: Corwin.

National Research Council. (2010). Preparing Teachers: Building Evidence for Sound Policy. Committee on the study of Teacher Preparation Programs in the United States. Washington, DC: National Academies Press. Available Online.

Nebraska Department of Education (2014) Teacher and Principal Performance Framework.

Nebraska Department of Education (2020) Nebraska Teacher and Principal Performance Standards.

Nguyen, T. D. (2020) Examining the Teacher Labor Market in Different Rural Contexts: Variations by Urbanicity and Rural States. *AERA Open*, 6(4), 1-24. DOI:https://doi.org/10.1177/2332858420966336

Olson Stewart, K., Rotheram-Fuller, E., & Liou, D. D. (2021). Beginning Teacher Support Model: Elementary Teachers' Resilience and Retention in Arizona. *International Journal of Modern Education Studies*, 5(1), 49-73. http://dx.doi.org/10.51383/ijonmes.2021.75

Perry, A. (2011) Teacher Preparation Programs: A Critical Vehicle to Drive Student Achievement. James B. Hunt, Jr. Institute for Educational Leadership and Policy, The University of North Carolina. Retrieved April 18, 2022 from http://www.hunt-institute.org/wp-content/uploads/2015/03/reVISION-Number-1-November-20111.pdf.

Podolsky, A., Kini, T., & Darling-Hammond, L. (2019) Does teaching experience increase teacher effectiveness? A review of US research. *Journal of Professional Capital and Community*, 4(4), 286-308. https://doi.org/10.1108/JPCC-12-2018-0032.

Putman, H., & Walsh, K. (2021) State of the States: Teacher Preparation Policy. National Council on Teacher Quality.

Ramos, G., & Hughes, T. R. (2020), Could more holistic policy addressing classroom discipline help mitigate teacher attrition? *eJournal of Education Policy,* 21(1). Https://doi.org/10.37803/ejepS2002

Redding, C., & Nguyen, T. D. (2021). GREENER THAN EVER? A look at the newest teachers in our public schools. *Phi Delta Kappan,* 103(3), 8–12. https://doi.org.leo.lib.unomaha.edu/10.1177/00317217211058506.

Regulations for the Approval of Teacher Education Programs, Title 92, Nebraska Administrative Code, Chapter 20 (2014 July). https://www.education.ne.gov/wp-content/uploads/2017/10/Rule20_2014.pdf.

Reininger, M. (2012). Hometown disadvantage? It depends on where you're from: Teachers' location preferences and the implications for staffing schools. *Educational Evaluation and Policy Analysis*, 34(2), 127–145.

Renbarger, R., & Davis, B. K. (2019) Mentors, Self-efficacy, or Professional Development: Which Mediate Job Satisfaction for New Teachers? A Regression Examination. *Journal of Teacher Education and Educators*, 8(1), 21-34.

Rochkind, J., Ott, A., Immerwahr, J., Doble, J., & Johnson, J. (2007). Lessons learned: New teachers talk about their jobs, challenges and long-range plans. Washington, DC: National Comprehensive Center for Teacher Quality and New York, NY: Public Agenda. Retrieved April 3, 2022 from https://eric.ed.gov/?id=ED498667.

Ronfeldt, M., & McQueen, K. (2017). Does New Teacher Induction Really Improve Retention? *Journal of Teacher Education*, 68(4), 394–410. https://doi-org.leo.lib.unomaha.edu/10.1177/0022487117702583

Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How Teacher Turnover Harms Student Achievement. *American Educational Research Journal*, 50(1), 4–36. https://doi.org/10.3102/0002831212463813.

Ronfeldt, M., Matsko, K. K., Nolan, H. G., & Reininger, M. (2020) Three Different Measures of Graduates' Instructional Readiness and the Features of Preservice Preparation That Predict Them. *Journal of Teacher Education*, 72(1), 56-71. https://doi.org/10.1177/0022487120919753

Rowley, J. B. (2006) *Becoming a High Performance Mentor: a guide to reflection and action*. Corwin Press.

Safir, S. & Dugan, J. (2021) *Street Data: A Next-Generation Model for Equity, Pedagogy, and School Transformation*. Corwin.

Saldana, J. (2021). *The Coding Manual for Qualitative Researchers*. Sage Publications.

Savin-Baden, M., & Howell Major, C. (2013) *Qualitative Research: The essential guide to theory and practice*. Routledge.

Sawchuk, S. (2018). Staffing Schools in No-Stoplight Towns: It takes ingenuity and hard work to find and keep teachers in remote districts. *Education Week*, 37(18), 22–25.

Shuls, J.V., Flores, J. M. (2020). Improving Teacher Retention through Support and Development. *Journal of Educational Leadership and Policy Studies*, 4(1).

Steffy, B. E., & Wolfe, M. P. (2001). A life-cycle model for career teachers. *Kappa Delta Pi Record*, 38(1), 16–19.

Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute. Retrieved April 2, 2022, from https://learningpolicyinstitute.org/product/coming-crisis-teaching.

Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2019). Understanding teacher shortages: An analysis of teacher supply and demand in the United States. *Education Policy Analysis Archives*, 27 (35). https://doi.org/10.14507/epaa.27.3696

Tatto, M. T. (2008). Teacher policy: a framework for comparative analysis. *Prospects* (00331538), 38(4), 487–508. https://doi-org.leo.lib.unomaha.edu/10.1007/s11125-009-9088-z

Tukey, J.W. (1977) *Exploratory Data Analysis*. Pearson.

U.S.DoE. (2022, March 28). U.S. education Secretary Miguel Cardona calls on states, districts, higher ed institutions to address nationwide teacher shortage and bolster student recovery with American rescue plan funds. U.S. Department of Education. https://www.ed.gov/news/press-releases/us-education-secretary-miguel-cardona-calls-states-districts-higher-ed-institutions-address-nationwide-teacher-shortage-and-bolster-student-recovery-american-rescue-plan-funds

Viadero, D. (2018) Teacher Recruitment and Retention: It's Complicated. *Education Weekly*. https://www.edweek.org/leadership/teacher-recruitment-and-retention-its-complicated/2018/01

Walker, T. (2022) Beyond Burnout: We must act now to prevent the great educator exodus. *NEA Today*, 40(4), 18-21.

Walsh, K. (2018). Getting SMART About STUDENT TEACHING: By better leveraging the student-teaching process, school leaders can reduce costs and improve their talent pipeline. *Educational Leadership,* 75(8), 38–42.

Wan, Y., Pardo, M., & Xia, J. (2021). Understanding the teacher pipeline for Indiana's K–12 public schools (REL 2021–065). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved from http://ies.ed.gov/ncee/edlabs.

Wan, Y., Pardo, M., & Xia, J. (2021). Understanding the teacher pipeline for Indiana's K–12 public schools (REL 2021–065). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved from http://ies.ed.gov/ncee/edlabs.

Wang, C. & Chen, X. (2009) The Characteristics and Enlightening of NCATE. *International Education Studies,* 2(2), 72-76. https://files.eric.ed.gov/fulltext/EJ1065680.pdf.

Webb, C.L., Kohler, K.L., & Piper, R.E. (2021). Teachers' preparedness and professional learning about using educational technologies during the COVID-19 pandemic. *Journal of Online Learning Research*, 7(2), 113-132.

Wiens, P. D., Chou, A., Vallett, D. & Beck, J. S. (2019). New Teacher Mentoring and Teacher Retention: Examining the Peer Assistance and Review Program. *Educational Research: Theory and Practice*, 30(2), 103-110.

Wilcoxen, C. L. (2017) *Comparing formative and summative instruments: What tools inform practice and guide teacher candidate decision making?* (Publication No. 10266709) [Doctoral Dissertation, University of Nebraska, Omaha]. ProQuest Dissertations Publishing.

Will, M. (2019) Teacher-Preparation Programs Again Have a Choice of Accreditors. But Should They? *Education Week*. Retreived April 17, 2022 from https://www.edweek.org/leadership/teacher-preparation-programs-again-have-a-choice-of-accreditors-but-should-they/2019/07.

Wilson, S. M., & Kelley, S. L. (2022) Landscape of Teacher Preparation Programs and Teacher Candidates. Evaluating and Improving Teacher Preparation Programs. National Academy of Education. Retrieved January 21, 2023 from https://files.eric.ed.gov/fulltext/ED618996.pdf.

Youngs, P. (2011). InTASC Model Core Teaching Standards: Research Synthesis. Retrieved April 17, 2022 from https://ccsso.org/resource-library/intasc-research-synthesis.

Appendix A

2020-2021 Nebraska 1st Year Teacher Survey (Teacher Version)

Main Block

2020-2021 Nebraska 1st Year Teacher Survey

Your responses to this survey are used to provide Nebraska teacher preparation institutions with information about the effectiveness of first year teachers prepared at their institutions. The evaluation standards used in this survey are adapted from the nationally recognized InTASC standards of teacher quality. These standards are consistent with both the Nebraska Teacher Framework and the evaluations used during teacher clinical experiences.

Survey results will be provided to participating preparatory institutions and are intended to inform their continuous improvement initiatives. Your responses to this survey will be reported anonymously along with other first year teachers prepared at Nebraska institutions. Responses are not individually identifiable nor shared with anyone (including your preparatory institution or principal).

If you did not receive a teaching certificate in 2020-2021, or otherwise believe that this survey was otherwise sent to you in error, please let us know by emailing us at nde.research@nebraska.gov.

This survey is intended for individuals completing their 1st year of teaching during the 2020-2021 school year on a regular teaching certificate.

Name: ${e://Field/TeacherFirstName} ${e://Field/TeacherLastName}
Endorsement(s): ${e://Field/Endorsements}
School: ${e://Field/SchoolName} (ID: ${e://Field/SchoolID})
Teacher Preparation Institution: ${e://Field/BestRecommendingInstitutionName}

You have more than one teaching certificate endorsement. Please choose the endorsement best matching the primary focus of your 2020-2021 teaching assignment. (response required)

The following 25 items ask you to rate the extent to which you feel you were prepared by the preparatory program you completed. Details and response guidance are provided on the: NE Clinical Practice Evaluation Rubric.

Standard 1. Learner Development

	Advanced	Proficient	Developing	Below Standard
Standard 1.1 - Use knowledge of students and their development and adjust teaching to facilitate learning.	○	○	○	○
Standard 1.2 - Build on student strengths to facilitate learning.	○	○	○	○

Standard 2. Learner Differences

	Advanced	Proficient	Developing	Below Standard
Standard 2.1 - Identify differentiation in student needs.	○	○	○	○
Standard 2.2 - Respond to differentiation in student needs with individualized instruction and varied learning experiences.	○	○	○	○
Standard 2.3 - Bring multiple perspectives and cultural resources to content and discussions.	○	○	○	○

Standard 3. Learning Environments

	Advanced	Proficient	Developing	Below Standard
Standard 3.1 - Promote a positive classroom environment.	○	○	○	○
Standard 3.2 - Use and communicate clear task and behavioral expectations to support an environment of learning.	○	○	○	○

Standard 4. Content Knowledge

	Advanced	Proficient	Developing	Below Standard
Standard 4.1 - Use and communicate content knowledge	○	○	○	○
Standard 4.2 - Use academic vocabulary and grammar	○	○	○	○
Standard 4.3 - Provide opportunities for students to demonstrate their content knowledge	○	○	○	○

Standard 5. Application of Content

	Advanced	Proficient	Developing	Below Standard
Standard 5.1 - Help students link concepts and engage in critical thinking	○	○	○	○
Standard 5.2 - Engage students in the development of literacy and communication skills	○	○	○	○

Standard 6. Assessment

	Advanced	Proficient	Developing	Below Standard
Standard 6.1 - Match instructions and assessments to learning objectives.	○	○	○	○
Standard 6.2 - Use formative and summative classroom assessments that facilitate learning	○	○	○	○
Standard 6.3 - Amend instructional strategies and adapt interventions as needed.	○	○	○	○
Standard 6.4 - Provide differentiated instruction and assessments that positively impact learning.	○	○	○	○

Standard 7. Planning for Instruction

	Advanced	Proficient	Developing	Below Standard
Standard 7.1 - Plan sequenced learning experiences and performance tasks linked to learning objectives	○	○	○	○
Standard 7.2 - Plan and implement multiple ways for students to demonstrate their knowledge and skills.	○	○	○	○

Standard 8. Instructional Strategies

	Advanced	Proficient	Developing	Below Standard
Standard 8.1 - Incorporate digital tools and technologies into instruction.	○	○	○	○
Standard 8.2 - Use evidence-based strategies to support critical thinking and content learning.	○	○	○	○
Standard 8.3 - Organize and manage the learning environment to maximize student engagement.	○	○	○	○

Standard 9. Professional Learning and Ethical Practice

	Advanced	Proficient	Developing	Below Standard
Standard 9.1 - Invite constructive feedback and respond positively.	○	○	○	○
Standard 9.2 - Set and implement goals to improve practice	○	○	○	○

Standard 10. Leadership and Collaboration

	Advanced	Proficient	Developing	Below Standard
Standard 10.1 - Communicate professionally - oral, written, and electronic	○	○	○	○
Standard 10.2 - Respond to people, problems and crises effectively	○	○	○	○

The following 2 items ask you to evaluate your overall performance and preparation.

11. Based upon your overall performance as a 1st year teacher, how would you rate your impact on student learning?

- ○ Highly Effective
- ○ Moderately Effective
- ○ Somewhat Effective
- ○ Ineffective

12. Overall, do you believe you were prepared to be an effective 1st year teacher?

- ○ Yes
- ○ No

The last two fields provide you with an opportunity to comment or provide suggestions. Your comments are appreciated and will be (anonymously) incorporated into information provided to Nebraska teacher preparatory institutions and to the NDE.

13. Comments to inform ${e://Field/BestRecommendingInstitutionName} with its continuing improvement efforts toward preparing classroom-ready teachers:

14. Comments which can help the Nebraska Department of Education improve this survey process:

#NDE 12-020

For more information about this survey, please contact:
Kelly Heineke | Office of Accountability, Accreditation, and Program Approval | Kelly.Heineke@nebraska.gov | 402-471-4863

Appendix B

2020-2021 Nebraska 1st Year Teacher Survey (Principal Version)

Main Block

2020-2021 Nebraska 1st Year Teacher Survey

This survey is designed to provide Nebraska educator preparation institutions with information about the effectiveness of first year teachers prepared by their institution. Survey items are adapted from the nationally recognized InTASC standards of teacher quality. These standards are consistent with both the Nebraska Teacher Framework and the evaluations used during teacher clinical experiences.

Your responses to this survey will not be shared with individual teachers. Survey results will be provided to teacher preparation institutions to inform their continuous improvement initiatives.

This survey is intended for principals of teachers completing their first year of teaching during the 2020-2021 school year on a regular teaching certificate.

Your responses to this survey should be reflective of the following first year teacher:

Name: **${e://Field/TeacherFirstName} ${e://Field/TeacherLastName}**
Endorsement(s): ${e://Field/Endorsements}
School: ${e://Field/SchoolName} (ID: ${e://Field/SchoolID})
Teacher Preparation Institution: ${e://Field/BestRecommendingInstitutionName}

If the teacher identified above is not a first year teacher, is not at your school, or you are otherwise receiving this survey in error, please email us at nde.research@nebraska.gov.

This teacher has more than one teaching certificate endorsement. Please choose the endorsement best matching the primary focus of their 2020-2021 teaching assignment. (response required)

The following 25 items ask you to rate the extent to which you feel this teacher was prepared by their preparatory program. Details and response guidance are provided on the: NE Clinical Practice Evaluation Rubric.

Standard 1. Learner Development

	Advanced	Proficient	Developing	Below Standard
Standard 1.1 - Uses knowledge of students and their development and adjusts teaching to facilitate student learning.	○	○	○	○
Standard 1.2 - Builds on student strengths to facilitate learning.	○	○	○	○

Standard 2. Learner Differences

	Advanced	Proficient	Developing	Below Standard
Standard 2.1 - Can identify differentiation in student needs.	○	○	○	○
Standard 2.2 - Responds to differentiation in student needs with individualized instruction and varied learning experiences	○	○	○	○
Standard 2.3 - Brings multiple perspectives and cultural resources to content and discussions.	○	○	○	○

Standard 3. Learning Environments

	Advanced	Proficient	Developing	Below Standard
Standard 3.1 - Promotes a positive classroom environment.	○	○	○	○
Standard 3.2 - Uses and communicates clear task and behavioral expectations to support an environment of learning.	○	○	○	○

Standard 4. Content Knowledge

	Advanced	Proficient	Developing	Below Standard
Standard 4.1 - Uses and communicates content knowledge	○	○	○	○
Standard 4.2 - Uses academic vocabulary and grammar	○	○	○	○
Standard 4.3 - Provides opportunities for students to demonstrate their content knowledge	○	○	○	○

Standard 5. Application of Content

	Advanced	Proficient	Developing	Below Standard
Standard 5.1 - Standard 5.1 - Helps students link concepts and engage in critical thinking	○	○	○	○
Standard 5.2 - Engages students in the development of literacy and communication skills	○	○	○	○

Standard 6. Assessment

	Advanced	Proficient	Developing	Below Standard
Standard 6.1 - Matches instructions and assessments to learning objectives	○	○	○	○
Standard 6.2 - Uses formative and summative classroom assessments that facilitate learning	○	○	○	○
Standard 6.3 - Amends instructional strategies and adapts interventions as needed	○	○	○	○
Standard 6.4 - Provides differentiated instruction and assessments that positively impact learning	○	○	○	○

Standard 7. Planning for Instruction

	Advanced	Proficient	Developing	Below Standard
Standard 7.1 - Plans sequenced learning experiences and performance tasks linked to learning objectives	○	○	○	○
Standard 7.2 - Plans and implement multiple ways for students to demonstrate their knowledge and skills.	○	○	○	○

Standard 8. Instructional Strategies

	Advanced	Proficient	Developing	Below Standard
Standard 8.1 - Incorporates digital tools and technologies into instruction	○	○	○	○
Standard 8.2 - Uses evidence-based strategies to support critical thinking and content learning	○	○	○	○
Standard 8.3 - Organizes and manages the learning environment to maximize student engagement.	○	○	○	○

Standard 9. Professional Learning and Ethical Practice

	Advanced	Proficient	Developing	Below Standard
Standard 9.1 - Invites constructive feedback and responds positively	○	○	○	○
Standard 9.2 - Sets and implements goals to improve practice	○	○	○	○

Standard 10. Leadership and Collaboration

	Advanced	Proficient	Developing	Below Standard
Standard 10.1 - Communicates professionally - oral, written, and electronic	○	○	○	○
Standard 10.2 - Responds to people, problems and crises effectively	○	○	○	○

Final Block

The following 2 items ask you to evaluate this teacher's overall performance and preparation.

11. Based upon the performance of this 1st year teacher, how would you rate their impact on student learning?

○ Highly Effective

○ Moderately Effective

- ○ Somewhat Effective
- ○ Ineffective

12. Would you consider this teacher effectively prepared for continuing employment in your district?

- ○ Yes
- ○ No

The last two fields provide you with an opportunity to comment or provide suggestions. Your comments are appreciated and will be (anonymously) incorporated into information provided to Nebraska teacher preparatory institutions and to the Nebraska Department of Education.

13. Comments to inform ${e://Field/BestRecommendingInstitutionName} with its continuing improvement efforts toward preparing classroom-ready teachers:

14. Comments which can help the Nebraska Department of Education improve this survey process:

Appendix C

Nebraska Clinical Practice Rubric

NEBRASKA
DEPARTMENT OF EDUCATION

Updated 12.19.17

Nebraska Clinical Practice Rubric

Teacher Candidate: _____

Evaluator's Name: _____

Evaluator's Role: _____

Date: _____

For Office use only: CT/ TC/ US

Select the cell in each row, which best describes performance. At midterm, the goal would be for student teachers to be performing at Developing or Proficient. If performance is scored "Below Standard," please be in communication with the coordinator of field experiences.

	Advanced	Proficient	Developing	Below Standard
Uses knowledge of students to meet needs **Standard 1** Learner Development InTASC 1; CAEP 1.1	Uses data about students and their development to adjust teaching and build on student strengths resulting in student learning.	Uses data about students and their development to adjust teaching.	Collects data about students and their development but does not adjust teaching.	Lacks evidence of data collection and use related to students and their development.
Differentiates instruction to meet student needs **Standard 2** Learner Differences InTASC 2; CAEP 1.1	Identifies students' needs for differentiation and responds with individualized instruction, flexible grouping, and varied learning experiences to include bringing multiple perspectives and cultural resources to the discussion of content.	Identifies students' needs for differentiation and responds with individualized instruction, flexible grouping, and varied learning experiences.	Identifies students' needs for differentiation.	Does not identify students' needs for differentiation.
Promotes a positive classroom environment through clear expectations **Standard 3** Learning Environments InTASC 3; CAEP 1.1	Communicates and reinforces clear task and behavior expectations to students, develops routines that support expectations and minimizes the loss of instructional time.	Communicates and reinforces clear task and behavior expectations to students and follows routines that support expectations for the learning environment.	Communicates and reinforces clear task and behavior expectations to students.	Attempts to communicate and reinforces clear task and behavior expectations to students.
Uses accurate content and academic vocabulary **Standard 4** Content Knowledge InTASC 4; CAEP 1.1	Communicates accurate content, uses academic vocabulary correctly, provides relevant opportunities for students to demonstrate understanding and uses knowledge of common misconceptions to create accurate understanding in the content area.	Communicates accurate content, uses academic vocabulary correctly and provides relevant opportunities for students to demonstrate understanding.	Communicates content and uses academic vocabulary, yet does not consistently provide relevant opportunities for students to demonstrate understanding.	Communicates inaccurate content, academic vocabulary and/or provides irrelevant opportunities for students to demonstrate understanding.

NEBRASKA
DEPARTMENT OF EDUCATION

Updated 12.19.17

Engages students in critical thinking and collaborative problem solving **Standard 5** Application of Content InTASC 5; CAEP 1.1	Links concepts to help students make connections and engages students in applying methods of inquiry in the discipline to engage learners in critical thinking.	Links concepts to help students make connections and engages students in applying methods of inquiry in the discipline.	Links concepts to help students make connections in the discipline.	Does not assist students in making connections in the discipline.
Develops literacy and communication skills through content **Standard 5** Application of Content InTASC 5; CAEP 1.1	Engages students to utilize literacy and communication skills from a variety of resources and perspectives to address targeted purposes and audiences.	Engages students to utilize literacy and communication skills by accessing a variety of resources and perspectives to show understanding of content.	Engages students in developing literacy and communication skills.	Provides few opportunities for students to develop literacy and communication skills.
Uses classroom assessment **Standard 6** Assessment InTASC 6; CAEP 1.1	Uses classroom formative and summative assessments that match objectives and inform instructional decisions to guide implementation of differentiated instructional strategies to include designing and/or adapting interventions as a result.	Uses classroom formative and summative assessments that match objectives and inform instructional decisions to guide implementation of differentiated instructional strategies.	Uses classroom formative and summative assessments that match objectives and inform instructional decisions.	Uses classroom formative and summative assessments but may not match objectives and/or inform instructional decisions.
Assesses for learning **Standard 6** Assessment InTASC 6; CAEP 1.1	Uses student performance data and knowledge of students to identify interventions that support and/or advance learning through a series of differentiated assessment practices that positively impact learning.	Uses student performance data and knowledge of students to identify interventions that support and/or advance students to positively impact learning.	Uses student performance data and knowledge of students to identify interventions that support students.	Does not use student performance data and/or knowledge of students to identify interventions that support students.
Plans for instruction **Standard 7** Planning for Instruction InTASC 7; CAEP 1.1	Sequences learning experiences linked to the learning objectives, performance tasks and assessments to provide multiple ways for students to demonstrate knowledge and skills to include using data to adjust for recurring learning needs throughout planning.	Sequences learning experiences linked to the learning objectives, performance tasks and assessments to provide multiple ways for students to demonstrate knowledge and skills.	Sequences learning experiences linked to the learning objectives, performance tasks and assessments.	Provides little or no evidence of sequenced learning experiences and/or experiences are not linked to the learning objectives, performance tasks and/or assessments.
Incorporates digital tools into instruction **Standard 8** Instructional Strategies InTASC 8; CAEP 1.1	Designs or adapts relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity.	Provides relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity.	Provides relevant learning experiences that incorporate digital tools to stimulate interest.	Provides learning experiences that incorporate digital tools infrequently or ineffectively.

NEBRASKA
DEPARTMENT OF EDUCATION

Updated 12.19.17

Uses research-based instructional strategies **Standard 8** Instructional Strategies InTASC 8; CAEP 1.1	Uses a broad range of evidence–based strategies to support learning in the content area, poses questions that elicit student thinking about information and concepts to build critical thinking skills.	Uses evidence–based strategies to support learning in the content area and poses questions that elicit student thinking and support critical thinking skills.	Uses evidence–based strategies to support learning in the content area and poses questions that elicit student thinking.	Uses strategies and poses questions.
Uses engagement to enhance learning **Standard 8** Instructional Strategies InTASC 8; CAEP 1.1	Organizes and manages the learning environment for student engagement and personal accountability using strategies that provide opportunities for students to process and articulate new knowledge.	Organizes and manages the learning environment for student engagement using strategies that provide opportunities for students to process and articulate new knowledge.	Manages the learning environment for student engagement.	Attempts to manage the learning environment for student engagement.
Accepts critique and input regarding performance **Standard 9** Professional Learning and Ethical Practice InTASC 9; CAEP 1.1	Invites constructive feedback, responds positively, independently sets and implements goals to improve practice.	Invites constructive feedback, responds positively, with support sets and implements goals to improve practice.	Invites constructive feedback, responds positively, but inconsistently implements goals to improve practice.	May resist constructive feedback or fail to implement goals to improve practice.
Conveys professional demeanor **Standard 10** Leadership and Collaboration InTASC 10; CAEP 1.1	Conveys a confident, professional decorum when interacting with learners, peers, colleagues and the community in small and large group situations to include seeking out leadership opportunities in the school and/or community.	Conveys a confident, professional decorum when interacting with learners, peers, colleagues and the community in small and large group situations.	Conveys professional decorum when interacting with learners, peers, colleagues and the community in small and large group situations. Any minor lapses have been addressed.	Conveys a lack of professional decorum when interacting.
Uses professional communication **Standard 10** Leadership and Collaboration InTASC 10; CAEP 1.1	Demonstrates professional oral, written and electronic communication, responds to people, problems and crises effectively and communicates with families through a variety of means (i.e. notes home, e-mails or websites, phone calls, conferences, meetings).	Demonstrates professional oral, written and electronic communication, responds to people, problems and crises effectively.	Demonstrates professional oral, written and electronic communication, responds to people, problems and crises effectively with additional assistance.	Demonstrates unprofessional oral, written and/or electronic communication and/or responds to people, problems and crises ineffectively.

Appendix D

Comparison Matrix of Survey Language to InTASC Standards

InTASC Categorcy	InTASC Standard	NDE Sub-Standard	Survey 1 Language	Survey 2 Language
The Learner and Learning	Learner Development	1.1	1. Student Development-Standard 1.1 - The teacher understands how students grow and develop.	Standard 1. Learner Development - Standard 1.1 - Uses knowledge of students and their development and adjusts teaching to facilitate student learning.
		1.2	1. Student Development-Standard 1.2 - The teacher recognizes that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas.	Standard 1. Learner Development - Standard 1.2 - Builds on student strengths to facilitate learning.
		1.3	1. Student Development-Standard 1.3 - The teacher implements developmentally appropriate and challenging learning experiences.	None presented
	Learner Differences	2.1	2. Learning Differences-Standard 2.1 - The teacher understands individual differences and diverse cultures and communities.	Standard 2. Learner Differences - Standard 2.1 - Can identify differentiation in student needs.
		2.2	2. Learning Differences-Standard 2.2 - The teacher ensures inclusive learning environments that enable each student to meet high standards.	Standard 2. Learner Differences - Standard 2.2 - Responds to differentiation in student needs with individualized instruction and varied learning experiences
		2.3	None presented	Standard 2. Learner Differences - Standard 2.3 - Brings multiple perspectives and cultural resources to content and discussions.
	Learning Environments	3.1	3. Learning Environments-Standard 3.1 - The teacher works with others to create environments that support individual and collaborative learning.	Standard 3. Learning Environments - Standard 3.1 - Promotes a positive classroom environment.
		3.2	3. Learning Environments-Standard 3.2 - The teacher creates environments that encourage positive social interaction, active engagement in learning, and self-motivation.	Standard 3. Learning Environments - Standard 3.2 - Uses and communicates clear task and behavioral expectations to support an environment of learning.
		3.3	3. Learning Environments-Standard 3.3 - The teacher manages student behavior to promote a positive learning environment.	None presented

InTASC Categorcy	InTASC Standard	NDE Sub-Standard	Survey 1 Language	Survey 2 Language
Content Knowledge	Content knowledge	4.1	4. Content Knowledge-Standard 4.1 - The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches.	Standard 4. Content Knowledge - Standard 4.1 - Uses and communicates content knowledge
		4.2	4. Content Knowledge-Standard 4.2 - The teacher creates learning experiences that make these aspects of the discipline accessible and meaningful for students to assure mastery of the content.	Standard 4. Content Knowledge - Standard 4.2 - Uses academic vocabulary and grammar
		4.3	4. Content Knowledge-Standard 4.3 - The teacher integrates Nebraska Content Standards and/or professional standards within instruction.	Standard 4. Content Knowledge - Standard 4.3 - Provides opportunities for students to demonstrate their content knowledge
	Application of content	5.1	5. Application of Content-Standard 5.1 - The teacher understands how to connect concepts across disciplines.	Standard 5. Application of Content - Standard 5.1 - Standard 5.1 - Helps students link concepts and engage in critical thinking
		5.2	5. Application of Content-Standard 5.2 - The teacher uses differing perspectives to engage students in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.	Standard 5. Application of Content - Standard 5.2 - Engages students in the development of literacy and communication skills

InTASC Categorcy	InTASC Standard	NDE Sub-Standard	Survey 1 Language	Survey 2 Language
Instructional Practice	Assessment	6.1	6. Assessment-Standard 6.1 - The teacher understands multiple methods of assessment.	Standard 6. Assessment - Standard 6.1 - Matches instructions and assessments to learning objectives
		6.2	6. Assessment-Standard 6.2 - The teacher uses multiple methods of assessment to engage students in their own growth, to monitor student progress, and to guide the teacher's and student's decision making.	Standard 6. Assessment - Standard 6.2 - Uses formative and summative classroom assessments that facilitate learning
		6.3	None presented	Standard 6. Assessment - Standard 6.3 - Amends instructional strategies and adapts interventions as needed
		6.4	None presented	Standard 6. Assessment - Standard 6.4 - Provides differentiated instruction and assessments that positively impact learning
	Planning for instruction	7.1	7. Planning for Instruction-Standard 7.1 - The teacher plans instruction that supports every student in meeting rigorous learning goals.	Standard 7. Planning for Instruction - Standard 7.1 - Plans sequenced learning experiences and performance tasks linked to learning objectives
		7.2	7. Planning for Instruction-Standard 7.2 - The teacher draws upon knowledge of content areas, curriculum, cross-disciplinary skills, technology, and pedagogy.	Standard 7. Planning for Instruction - Standard 7.2 - Plans and implement multiple ways for students to demonstrate their knowledge and skills.
		7.3	7. Planning for Instruction-Standard 7.3 - The teacher draws upon knowledge of students and the community context.	None presented
	Instructional Strategies	8.1	8. Instructional Strategies-Standard 8.1 - The teacher understands a variety of instructional strategies.	Standard 8. Instructional Strategies - Standard 8.1 - Incorporates digital tools and technologies into instruction
		8.2	8. Instructional Strategies-Standard 8.2 - The teacher uses a variety of instructional strategies to encourage students to develop deep understanding of content areas and their connection and to build skills to apply knowledge in meaningful ways.	Standard 8. Instructional Strategies - Standard 8.2 - Uses evidence-based strategies to support critical thinking and content learning
		8.3	8. Instructional Strategies-Standard 8.3 - The teacher utilizes available technology for instruction and assessment.	Standard 8. Instructional Strategies - Standard 8.3 - Organizes and manages the learning environment to maximize student engagement.

InTASC Categorcy	InTASC Standard	NDE Sub-Standard	Survey 1 Language	Survey 2 Language
Professional Responsibility	Professional Learning and Ethical Practice	9.1	9. Professional Learning and Ethical Practice-Standard 9.1 - The teacher engages in ongoing professional learning.	Standard 9. Professional Learning and Ethical Practice - Standard 9.1 - Invites constructive feedback and responds positively
		9.2	9. Professional Learning and Ethical Practice-Standard 9.2 - The teacher models ethical professional practice.	Standard 9. Professional Learning and Ethical Practice - Standard 9.2 - Sets and implements goals to improve practice
		9.3	9. Professional Learning and Ethical Practice-Standard 9.3 - The teacher uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (students, families, other professionals, and the community), and adapts practice to meet the needs of each student.	None presented
	Leadership and Collaboration	10.1	10. Leadership and Collaboration-Standard 10.1 - The teacher seeks opportunities to take responsibility for student learning.	Standard 10. Leadership and Collaboration - Standard 10.1 - Communicates professionally - oral, written, and electronic
		10.2	10. Leadership and Collaboration-Standard 10.2 - The teacher seeks opportunities, including appropriate technology, to collaborate with students, families, colleagues, and other school professionals, and community members to ensure student growth.	Standard 10. Leadership and Collaboration - Standard 10.2 - Responds to people, problems and crises effectively

InTASC Categorcy	InTASC Standard	NDE Sub-Standard	Survey 1 Language	Survey 2 Language
(NDE Specific)		11.1	11. Impact on Student Learning and Development-Standard 11.1 - The teacher works to positively impact the learning and development for all students.	None presented
		12.1	12. Professional Dispositions-Standard 12.1 - The teacher demonstrates passion, self-awareness, initiative and enthusiasm.	
		12.2	12. Professional Dispositions-Standard 12.2 - The teacher demonstrates skill in interpersonal relationships, reflective response to feedback, and displays evidence of appropriate social awareness.	
		12.3	12. Professional Dispositions-Standard 12.3 - The teacher practices good judgment, flexibility, problem-solving skills, professional communication, and organization.	
		12.4	12. Professional Dispositions-Standard 12.4 - The teacher maintains a professional demeanor and appearance, and displays dependability, punctuality, and perseverance.	